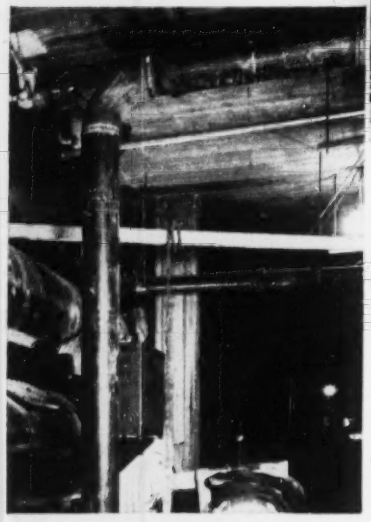
ENGINEERING NEWS-RECORD

A McGRAW-HILL PUBLICATION

CRESTPARK APARTMENTS
Dallas, Texas
Architects—Smith and Mills, Dallas, Texas
Mechanical Contractors—Leslie Miller, Inc., Fort Worth, Texas



Wrought iron 8-inch piping in the boiler room.

Wrought iron condenser water lines leading from condensers in boiler room to cooling tower.

Keeping 'em Cool in Texas!

BYERS
WROUGHT IRON PIPE

Because complete air conditioning is a major attraction of the new eleven-story Crestpark Apartments, the designers naturally aimed at top dependability. Nearly 20,000 feet of Byers Wrought Iron pipe was installed in the system's chilled and condenser water lines to safeguard against premature pipe failure.

The structure, reportedly one of the most modern built in the Southwest in recent years, is owned by the Belvedere Corporation.

The Southwest has been a leader in the use of air conditioning equipment, and it is interesting to note how widely engineers have forestalled corrosive attack by using Byers Wrought Iron pipe. Since the cost of even minor repairs is bound to be high, this use of wrought iron is a definite economy measure.

The selection of Byers Wrought Iron pipe for corrosive services is accepted design practice, and is endorsed by performance records that testify to the material's superior corrosion resistance. These service records from the past are providing an increasing number of the nation's leading engineers and designers with a reliable guide for material selection in today's modern buildings.

With air conditioning becoming a "must" in apartments, hotels and new office buildings in many sections, you may be interested in the information contained in our bulletin, WROUGHT IRON FOR REFRIGERATION AND AIR CONDITIONING SYSTEMS. We'll be glad to send you a copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N.Y.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON
TUBULAR AND HOT ROLLED PRODUCTS
ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

"CUSHIONED" against wear

Reason Why Redwing-H Air Hose Gives Top Heavy-Duty Performance on the Job

You can depend on REDWING-H Cord Air Hose for longest, trouble-free service – even in the roughest kind of going in mines, quarries and construction operations.

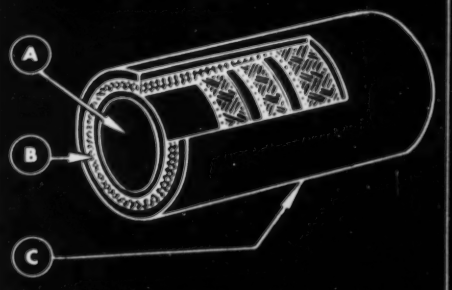
Reason is that this hose was developed by the G.T.M.—Goodyear Technical Man—to take hard knocks. Its cover—bright red in color—is resilient, tough stock that bounces away digs, cuts and abrasion. Under this super-strong cushion are multi-braids of high-strength rayon reinforcement—and a seamless, oil-resistant tube. Everything about REDWING-H adds up to longer, better service.

Ask the G.T.M. or your Goodyear Distributor about REDWING-H Cord Air Hose for your toughest jobs—available in continuous lengths, sizes from ½" to 1½" i.d. for working pressures from 200 to 350 lbs. psi. Write Goodyear, Mechanical Goods Division, Akron 16, Ohio.

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

GTM-Specified

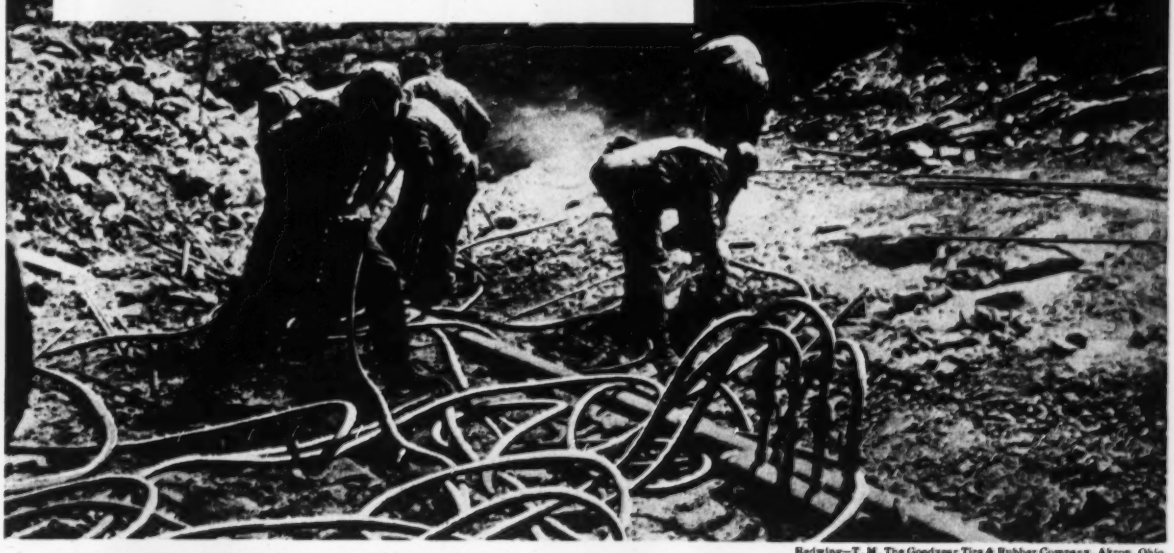
REDWING-H CORD AIR HOSE



A Synthetic tube is seamless, non-porous, non-flaking, oil-resistant

B Two or three braids of high-strength rayon reinforce against shock blows

C Red cover of heavy, resilient stock bounces away abrasion, cuts, gouges



Redwing—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

YOUR GOODYEAR DISTRIBUTOR *can quickly supply you with Hose, Flat Belts, V-Belts, Packing, Tank Lining, Rubber-Covered Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."*

GOODYEAR

THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

BID WET JOBS WITH CONFIDENCE!

Why gamble on your dewatering estimates? Get PRE-BID estimates by competent, practical construction men who have specialized in all phases of dewatering for periods up to twenty-six years.

All estimates are based on a careful analysis of sub-surface borings, on actual pumping experience in the soils to be dewatered, and on site investigations.

When soil conditions indicate that other dewatering methods are more practical and economical, we are qualified to advise other proven methods.

26 YEARS EXPERIENCE

Foundation Equipment Corporation

Long Island City 1, N.Y.—38th Ave. and 10th St.
EXeter 2-1100

Chicago, Illinois — 2608 W. 111th St.
Hillsop 5-8282

ENGINEERING NEWS-RECORD

ABP Member ABC

Editorial offices: 330 W. 42nd St., New York 36. Tel. LOngacre 4-3000

Number of copies of this issue printed: 58,463

Contents on page 17

Waldo G. Bowman
Editor

E. E. Halmos Jr. — *Managing Editor*
V. T. Boughton — *Transportation, Power*
F. S. Merritt — *Architectural, Structural*
R. H. Dodds — *Contracting, Heavy Construction*
S. C. Jensen — *Materials and Equipment*
A. J. Fox Jr. — *Hydraulics, Water supply, Sanitation*
J. J. Christie — *National Affairs*
A. A. Layne — *Labor, Men and Jobs*
J. P. Chamberlain — *Business and Finance*
R. W. O'Neill — *International, Features*
A. R. Smith — *Municipal*
J. R. Carr — *Midwest (Chicago)*
L. L. Wise — *West (San Francisco)*
N. A. Bowers — *Consultant (San Francisco)*
Elsie Eaves — *Business News Department*
J. H. Webber — *Economics*
J. A. Mahoney, M. O. Wetzel — *Construction Reports*
M. W. Roessler, E. R. Huber, Dori Weiss — *Statistics, Costs, Prices*
G. T. Orick — *Copy Desk*
H. G. Compton — *Photography*
T. D. MacGregor, M. V. Leggiero — *Copy, Rewrite, Layout*
Joan Ash — *Research*
L. T. Tarpey, J. C. Greenough — *Printing*

Washington News Bureau, Room 1189 National Press Building: G. B. Bryant, Jr., *Manager*, Glen Bayless, Jay Flocken, Boyd France, J. M. Gambatese, Sam Justice, W. H. Kearns, J. L. Kent, Craig Lewis, D. O. Loomis, Jesse Mock, Gladys Montgomery, A. L. Moore, M. A. Reichek, Caroline Robertson, V. B. Smith, W. B. Whichard, Jr.

Domestic News Bureaus: *Atlanta*, 1321 Rhodes-Haverty Bldg., E. D. White; *Cleveland*, 1510 Hanna Bldg., R. A. Cochran; *Detroit*, 856 Penobscot Bldg., S. H. Brams; *Houston*, 1 Main Street, J. A. Lee; *San Francisco*, 68 Post Street, M. C. Ralston; *Los Angeles*, 1111 Wilshire Blvd., John Shinn; *Seattle*, 6040 Fifth Ave., N.E., Ray Bloomberg.

Correspondents: Albany, Albuquerque, Augusta, Me., Austin, Boston, Boulder, Baltimore, Birmingham, Bismarck, Charleston (W. Va.), Charleston (S. C.), Columbus, Cincinnati, Cleveland, Chicago, Cheyenne, Dallas, Detroit, Durham, Harrisburg, Helena, Houston, Hartford, Indianapolis, Jackson, Miss., Jacksonville, Jefferson City, Kansas City (Mo.), Lansing, Lincoln, Little Rock, Miami, Memphis, Minneapolis, Montgomery, Milwaukee, New Orleans, Norfolk, Omaha, Oklahoma City, Philadelphia, Pittsburgh, Portland (Ore.), Providence, Phoenix, Pierre, St. Louis, Schenectady, Syracuse, St. Paul, Seattle, Salt Lake City, Spokane, Topeka, Trenton, Wilmington. *Canada:* Montreal, Toronto, Ottawa, Victoria, Regina.

Foreign News Bureaus: J. K. Van Denburg, Jr., *New York*; G. W. Schroder, *Frankfurt*; Nathaniel McKitterick, *London*; Herbert Leopold, *Manila*; John Wilhelm, *Mexico City*; Ross Hazeltine, *Paris*; A. W. Jessup, *Tokyo*. **Correspondents:** Amsterdam, Athens, Bangkok, Bogota, Bombay, Brussels, Buenos Aires, Caracas, Copenhagen, Geneva, Havana, Helsinki, Johannesburg, Lima, Madrid, Melbourne, Oslo, Rome, Sao Paulo, Stockholm, Sydney, Tehran, and 21 other principal cities and countries.

Robert F. Boger
Publisher

June 4, 1953 — ENGINEERING NEWS-RECORD — Vol. 150, No. 23

Member ABC and ABP

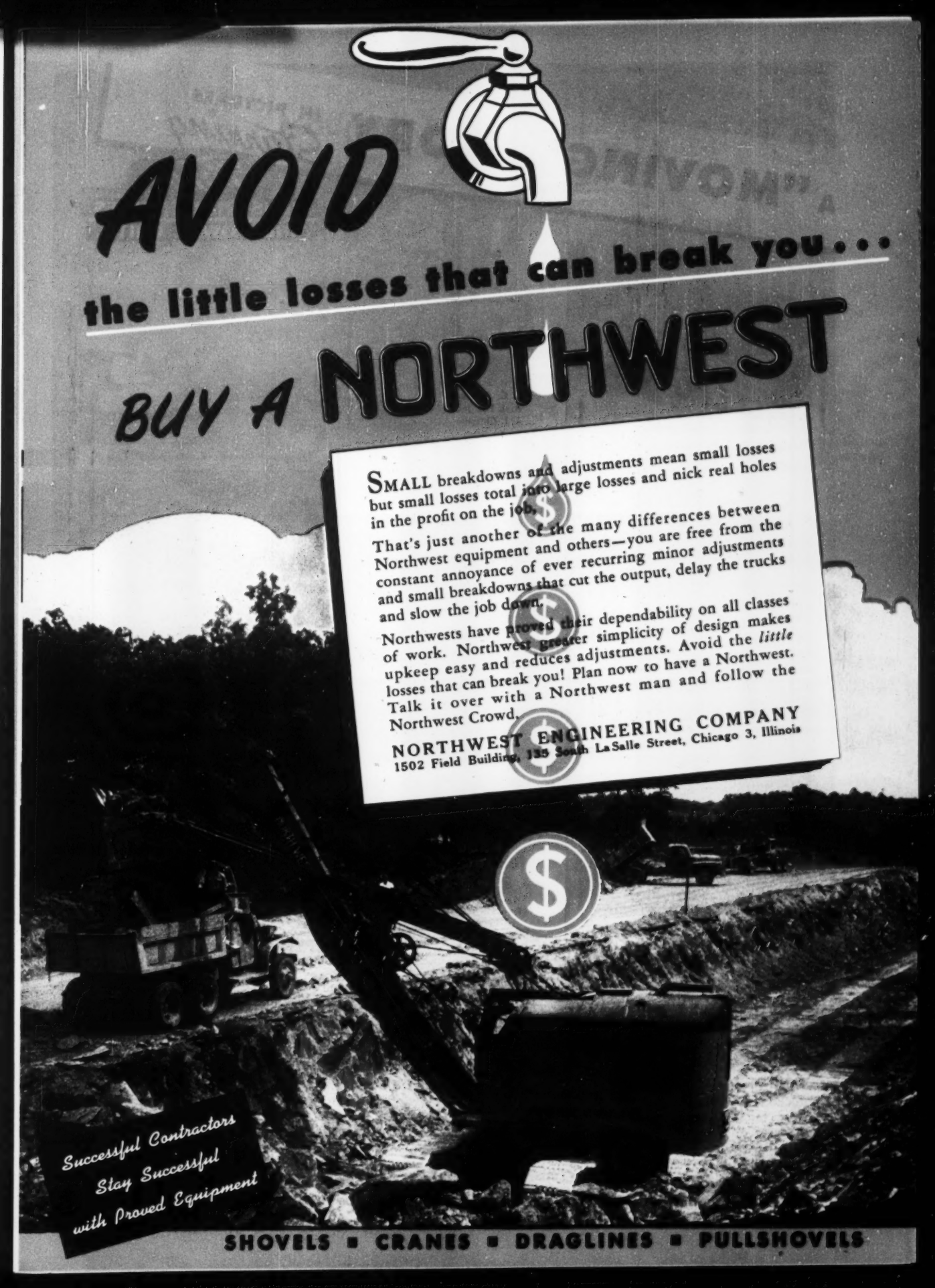
Published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. **Publication Office, 99-129 North Broadway, Albany 1, N. Y.**

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Engineering News-Record — Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

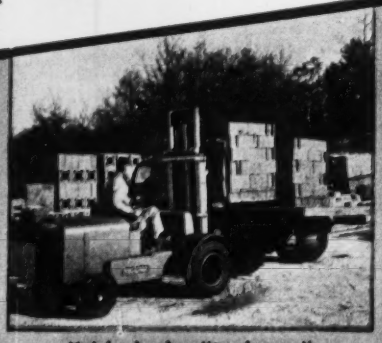
Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. Position and company connection must be indicated on subscription orders.

Single copies 35c. Subscription rates — United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada, $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere countries, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries, $20.00 a year; $30.00 for two years; $40.00 for three years. Entered as second class matter October 29, 1936, at the Post Office at Albany, N. Y., under Act of Mar. 3, 1879. Printed in U. S. A.
Copyright 1953 by McGraw-Hill Publishing Co., Inc. — All Rights Reserved.

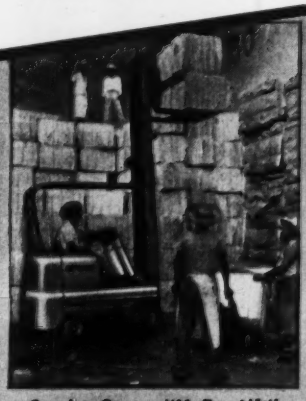

AVOID
the little losses that can break you...
BUY A NORTHWEST
SMALL breakdowns and adjustments mean small losses but small losses total into large losses and nick real holes in the profit on the job.
That's just another of the many differences between Northwest equipment and others—you are free from the constant annoyance of ever recurring minor adjustments and small breakdowns that cut the output, delay the trucks and slow the job down.
Northwests have proved their dependability on all classes of work. Northwest greater simplicity of design makes upkeep easy and reduces adjustments. Avoid the *little* losses that can break you! Plan now to have a Northwest. Talk it over with a Northwest man and follow the Northwest Crowd.
NORTHWEST ENGINEERING COMPANY
1502 Field Building, 135 South LaSalle Street, Chicago 3, Illinois
Successful Contractors Stay Successful with Proved Equipment
SHOVELS ■ CRANES ■ DRAGLINES ■ PULLSHOVELS

A "MOVING" STORY IN PICTURES Starring Ford

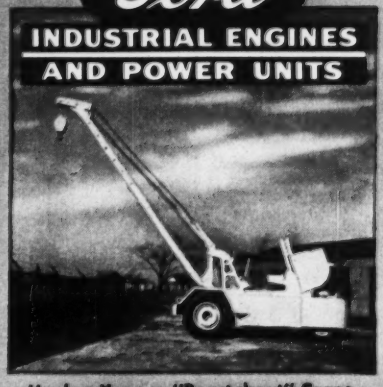
INDUSTRIAL ENGINES AND POWER UNITS



Knickerbocker "truck-man"



Service Caster "MoTowLift"



Hughes-Keenan "Roustabout" Crane

Gerlinger Carrier

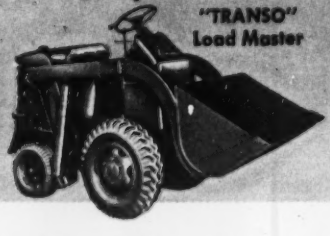
Lessman Power Shovel

Wayne Power Shovel

Coles Crane

Here's proof that Ford Industrial Power takes many a load "off your mind"

"TRANSO" Load Master



Dempster DIGGSTER

Mention any type of material . . . steel, stone, lumber, concrete blocks, rubber . . . almost anything that is bulky and has to be moved, piled or handled. The list is almost endless . . . and so are the applications of low-cost Ford Industrial Power to these needs.

Ford Heavy Duty Industrial Engines and Power Units comprise 6 Great Series, ranging from 134 cu. in. to 317 cu. in. displacement. With the Right Features, the Right Power, the Right Service to offer, it will pay you to *specify* FORD!

INDUSTRIAL ENGINE DEPARTMENT
FORD MOTOR COMPANY
15050 Woodward Avenue
Highland Park 3, Michigan

FORD MOTOR COMPANY
is celebrating its Fiftieth Anniversary
1903 ★ 1953

MODERN, NUISANCE-FREE

Refuse Disposal

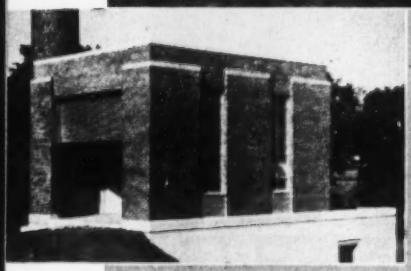
to highest community standards

GREEN BAY, WISCONSIN
Capacity 120 tons
per 24 hours

PITTSBURGH • DES MOINES

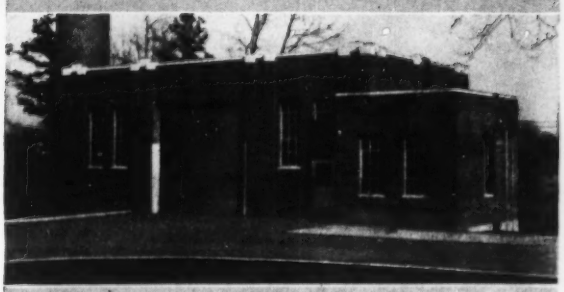
High Temperature

REFUSE INCINERATORS



WILMINGTON, DELAWARE
Capacity 225 tons
per 24 hours

MONROE, WISCONSIN
Capacity 30 tons
per 24 hours



BURLINGTON, NORTH CAROLINA
Capacity 60 tons per 24 hours

The problems of refuse disposal at low cost and without offense to surrounding areas are answered effectively by Pittsburgh-Des Moines Incinerators. Operating at high temperatures, these efficient units burn combustible refuse completely, without odor or objectionable smoke, and are built in all capacities. Let us consult on your particular requirements, without obligation.

PITTSBURGH • DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH (25) . . . . . 3414 Neville Island
NEWARK (2) . . . 216 Industrial Office Bldg.
CHICAGO (3), 1218 First National Bank Bldg.
LOS ANGELES (48), ... 6399 Wilshire Blvd.
DES MOINES (8), 915 Tuttle Street
DALLAS (1), 1219 Praetorian Bldg.
SEATTLE . . . . . 522 Lane Street
SANTA CLARA, CAL., 621 Alviso Road

How the best product in its field has been made still better

Not overnight, of course—but by a series of improvements gained through research and development resulting in *modernized* cast iron pipe. Tougher, stronger, tuberculation-proof pipe with sustained carrying capacity. Centrifugally cast and, when needed, centrifugally cement-lined.

All of our member companies have centrifugal casting facilities for producing tougher, stronger *modernized* cast iron pipe. All can supply this pipe with cement lining centrifugally applied, resulting in sustained carrying capacity, reduced friction loss and lower pumping costs.

If you want the most efficient and economical pipe ever made for water distribution, your new mains will be laid with *modernized* cast iron pipe with either bell-and-spigot or mechanical joints. Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Ave., Chicago 3.

CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

Modernized **cast iron**

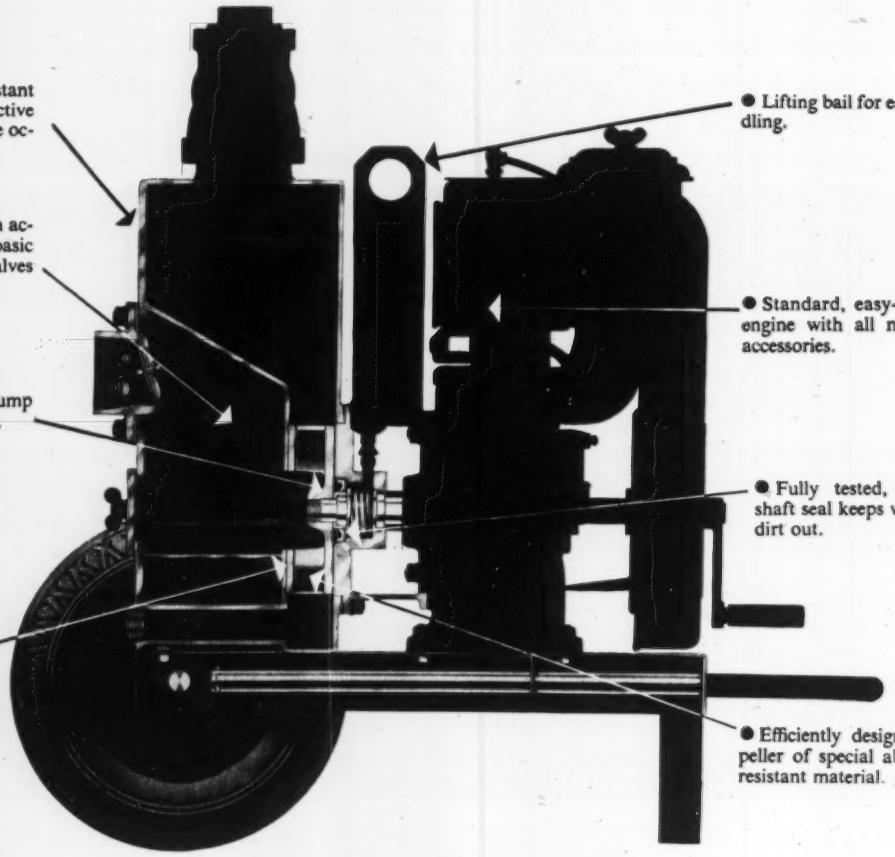
This cast iron water main, uncovered for inspection, is in its 106th year of service in Boston, Mass.—one of more than 40 cities with century-old water or gas mains in service.

pipe

for Modern Waterworks Operation

Here's the simplest, sturdiest pump a contractor can use

It's the Worthington BLUE BRUTE *Self-priming Centrifugal Pump*



- Light weight, rust-resistant steel casing permits effective field repair if job damage occurs.
- Self-priming operation accomplished by correct basic hydraulic design. No valves or parts to clog.
- Only two moving pump parts—seal and impeller.
- Renewable and reversible impeller wear plate doubles impeller life.
- Lifting bail for easy handling.
- Standard, easy-starting engine with all necessary accessories.
- Fully tested, reliable shaft seal keeps water in, dirt out.
- Efficiently designed impeller of special abrasion-resistant material.

MINIMUM MAINTENANCE!

Every feature pointed out above was designed into this pump to reduce maintenance requirements to the bare minimum. Over a hundred years of Worthington pump building experience assure you that the Blue Brute is the finest pump you can buy.

It'll pay you to find out more about the Blue Brutes. Ask your nearest Worthington distributor for Bulletin W-2010-B20. Or write to Worthington Corporation, Construction Equipment Division, Plainfield, N. J.

H.3.4

WORTHINGTON

IF IT'S A CONSTRUCTION JOB, IT'S A BLUE BRUTE *JOB*

ROCK DRILLS • WAGON DRILLS • COMPRESSORS • CONCRETE MIXERS • PORTABLE PUMPS

READER COMMENT

Fabulous salaries?

SIR: I wish to add my "second" to the letter to Robert Skimin (P. 10, Engineering News-Record, April 30, 1953) praising the publication of ". . . at least a small counter to . . . the fabulous salaries awaiting engineering college graduates." My experience indicates salaries offered engineers ten to twenty years out of school are so far behind the cost of living that many are shifting to more lucrative fields.

In reading your article "Civil Engineers' Income Averages $7,100" (Page 26 Engineering News-Record, April 30, 1953) I could not get out of my mind a sentence I read a few days ago in a New York Life Insurance Company ad (Ladies Home Journal, May 1953, Page 23, Column 2, Paragraph 4), "The average income of a physician in the United States is less than $13,000 a year, according to the latest survey." Granted, the physician's education costs more than the engineer's. Those in your article were the cream of the crop—all over thity-five years of age and full members of their societies. The differential seems rather wide.

LOUIS HENKE, JR.
Civil Engineer
Rhode Island

Modern masonry cements don't cause cracking

SIR: The article "Masonry Cracking", on page 34 of the May 7, 1953, issue of ENR correctly summarizes my ASTM paper except for one thing. The term "masonry cement" in the sentence "This oxide is present in large amounts in normal hydrated dolomitic lime and in masonry cement" should have a qualifying adjective. In my paper the first reference to the material which gave trouble in Iowa (and subsequently in Wisconsin) was "a particular brand of masonry cement." After identification as to type, the qualification "magnesian" was used throughout the paper, in a preprint of an *NBS Technical News Bulletin* summary article on the subject, a copy of which was sent you and which may have provided the basis for your account, the expression "some masonry cements" (emphasis supplied) was used. In any case, absence of qualification for the term "masonry cement" gives a quite erroneous impression. Modern masonry cement is characteristically an interground mixture of portland cement clinker and limestone and is

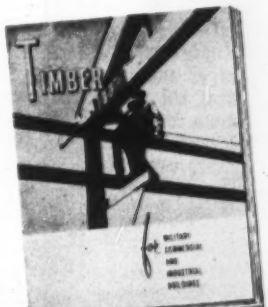
MILITARY — General purpose warehouse for Radford (Va.) Arsenal. Twelve 60′ span timber trusses fabricated by J. A. Jones Construction Co., using TECO connectors.

Build those MILITARY, COMMERCIAL and INDUSTRIAL BUILDINGS Now with TIMBER, using TECO WEDGE-FIT connectors

Timber is plentiful, as usual—

TECO WEDGE-FIT connectors for strong, efficient timber joints, and Trip-L-Grip framing anchors for secondary connections, are immediately available—

Timber fabricators in all sections of the country are ready to supply your needs in timber trusses and framing.



Free booklet, "Timber for Military, Commercial and Industrial Buildings", has 20 pages depicting hangars, warehouses, garages, stores and factories, built with the TECO timber connector system, glued laminated and Lamella construction. Send TODAY for a copy — use the coupon or your letterhead.

TIMBER ENGINEERING COMPANY 1319 18th STREET, N.W. WASHINGTON 6, D. C.

Chicago • New Orleans • In Canada: J. E. Goodman Sales, Ltd., Toronto

Please send FREE booklets, "Timber for Military, Commercial and Industrial Buildings" and "Trip-L-Grip Framing Anchors".

NAME .....

FIRM .....

STREET .....

CITY ..... ZONE ..... STATE .....

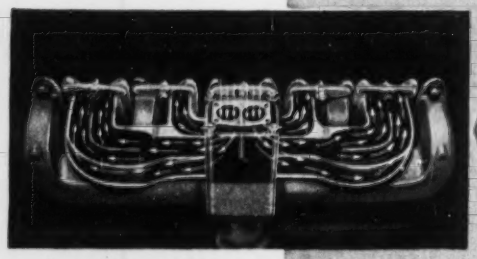
ENR

Engineered to Excel

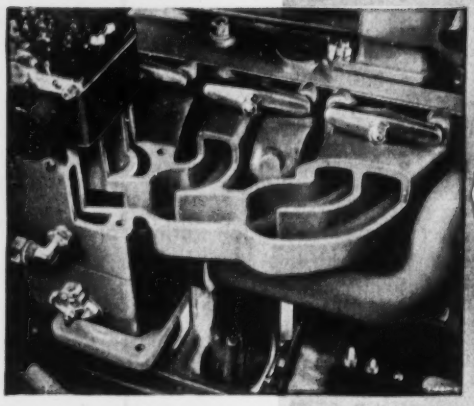
CONTINENTAL MOTORS · Powerful as the Nation · AMERICA'S STANDARD

· CONTINENTAL ·
RED SEAL POWER

Continental engines owe their steadily-widening use to a reputation for dependability, built up over many years. Dependability, in turn, results in very large measure from long-continued emphasis on engineering details.

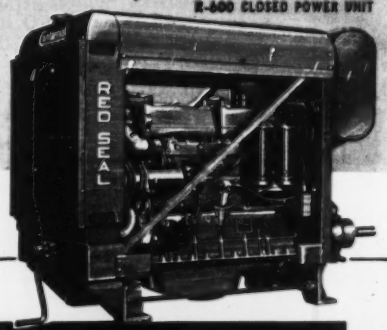


The exclusive Continental system of fuel distribution known as Individual Porting is only one of countless engineering features which join in Red Seal engines to assure power, economy and trouble-free long life.



Intake manifold is cast with separate port for each cylinder. Cutaway view shows the splitters, which are so designed and located as to provide uniform flow of mixture to all ports. Control ledges and re-atomizing edges, not visible in photo, assure complete utilization of even the least volatile "heavy ends" of the fuel.

R-600 CLOSED POWER UNIT



FOR PERFORMANCE, ECONOMY AND STAMINA BORN OF ENGINEERING LEADERSHIP, AND BACKED BY PARTS AND SERVICE FACILITIES THROUGHOUT THE WORLD, STANDARDIZE ON EQUIPMENT WITH CONTINENTAL RED SEAL POWER.

Continental Motors Corporation
MUSKEGON MICHIGAN

quite free from expansion. This type of masonry cement accounts for at least 90 percent of masonry cement production. The magnesian masonry cement described in my paper has now, according to my information, been withdrawn from the market.

J. W. McBURNEY,
Consultant on Masonry and Masonry Materials
U. S. Department of Commerce,
Washington, D. C.

SIR: Free magnesium oxide is present in large amounts in normal hydrated dolomitic limes (as stated in the article), but free magnesium oxide can be present in masonry cements *only* if such masonry cements contain "normal hydrated dolomitic limes". A vast majority of the masonry cements on the market today contain *no* "normal hydrated dolomitic limes", and "free magnesium oxide" is not present.

"Masonry cements" consisting of essentially equal parts of portland cement and pulverized limestone contain no "free magnesium oxide" and are volumetrically stable. This type of masonry cement constitutes the overwhelming preponderance of "masonry cement" on the market today.

C. E. WUERPEL,
Technical Director,
Marquette Cement Co.,
Chicago, Ill.

More soil-test data wanted

SIR: The article "Bigger soil test plate permits bigger pressures under footings" (ENR April 16, p. 51), implies that a 4-ft. square plate settled less than a 2-ft. square plate under the same pressure per unit of area and that this experience contradicts certain theoretical concepts of soil mechanics. Personally, I am not aware of "some textbooks on soil mechanics" contending that for non-cohesive soils a 2-ft. square plate would settle nearly as much as a 4-ft. square plate under a given unit pressure, as this is implied by the author.

The present letter is to suggest that the author publish the following information to clarify the situation:

(1) Diagram showing load-settlement curves (maximum, minimum and average settlement) both of the 2-ft. and 4-ft. square plates. (2) Total number of tests performed on 2-ft. and 4-ft square plates. (3) Nature of tests performed to determine that the soil conditions were actually and not just "apparently" the same.

The fundamental area-load-settlement concepts of soil mechanics

Adams performance pays off for contractor on 33½ mile road job!

● Easter & Schroeder, Inc., of Griswold, Iowa, are experienced road builders—built 33½ miles of farm-to-market roads last year. With scrapers roughing in the elevations (pictured) two Adams 100 h.p. graders built every mile . . . Mr. Easter, who can grade to "blue tops" with any of them, says he likes his Adams machines because of their "power, easy operation at all times" and because "you can see what you are doing." Bill Hoover, operator, backs him up. Both say that their

On heavy grading, like this, Adams graders quickly show their unequalled capacity —their ability to do more work per dollar of operating cost . . . Prove them on your own jobs.

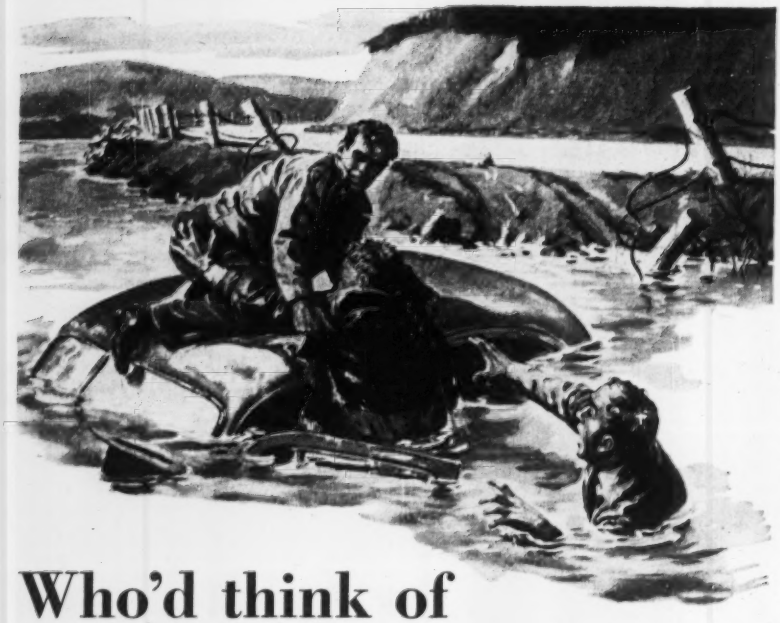
Adams machines will do more work, operate easier and faster than other popular makes of graders they have used. They compare by experience—and they're in business to make money.

Why don't you try a new, improved Adams? Let your local Adams dealer demonstrate one on your work. Phone him today.

J. D. ADAMS MANUFACTURING CO. • INDIANAPOLIS

Make your next motor grader an

ADAMS



Who'd think of engineering reports

at a time like this?

(A true story based on Company File 96B12246)

Our company has a contract to do engineering research work on a government project.

The day we finished at the experimental station, we stowed a brief case bulging with notes, technical drawings and progress reports in the car's trunk. Then we headed for our home office.

About half way, we missed a tricky curve and wound up in a river. Fortunately, we all got out of the car safely. But we were too shaken up to think about rescuing the brief case. It stayed under water five hours – long enough to make much of its contents illegible. *Weeks of work were washed out.*

Too often, in a situation like this, a company finds itself taking a large financial loss.

Why? Simply because no one gave a thought to adequate Valuable Papers Insurance.

Valuable Papers Insurance—which can be written to apply on and off your premises—covers loss or damage due to fire, storm, water, explosion, riot—even theft, vandalism, and just plain disappearance. It pays the cost of restoring or replacing notes, reports, plans, drawings, tracings, maps, books, documents and similar records. Irreplaceable material is insured for a stipulated value payable in cash.

Considering the broad protection it offers, Valuable Papers Insurance is remarkably low-priced. Ask your Hartford Accident and Indemnity Company Agent or your insurance broker for full details—*today!*

Year in and year out you'll do well with the

Hartford

Hartford Fire Insurance Company • Hartford Accident and Indemnity Company
Hartford Live Stock Insurance Company • *Hartford 15, Connecticut*

queried by the authors are valid only in the case of soil deposit, the properties of which in a horizontal plane are uniform. This is usually the case of most deposits. It has, however, been my experience with sand and sand-clay deposits in regions of former glaciation that they are not uniform as evidenced by results of series of load tests on 1-ft. square plates (see Tschebotarioff, "Soil Mechanics, Foundations, and Earth Structures", McGraw-Hill Book Co., 1951, p. 369).

Similar findings have been made in the New York region. Therefore, a larger number of smaller scale tests (load tests on 1-ft. square plates or penetratio ntests) will give a clearer picture of the actual bearing properties of the soil under the entire area of a large building than will a small number of tests on large plates. The latter are liable to reflect chance local variations of soil properties which are not discernible by visual inspection. Hence, they may be misleading. This is what seems to have happened at Elmhurst General Hospital.

Building codes that do not recognize the possibility of such situations should be revised to conform to reality.

GREGORY P. TSCHEBOTARIOFF
Professor of Civil Engineering
Princeton University

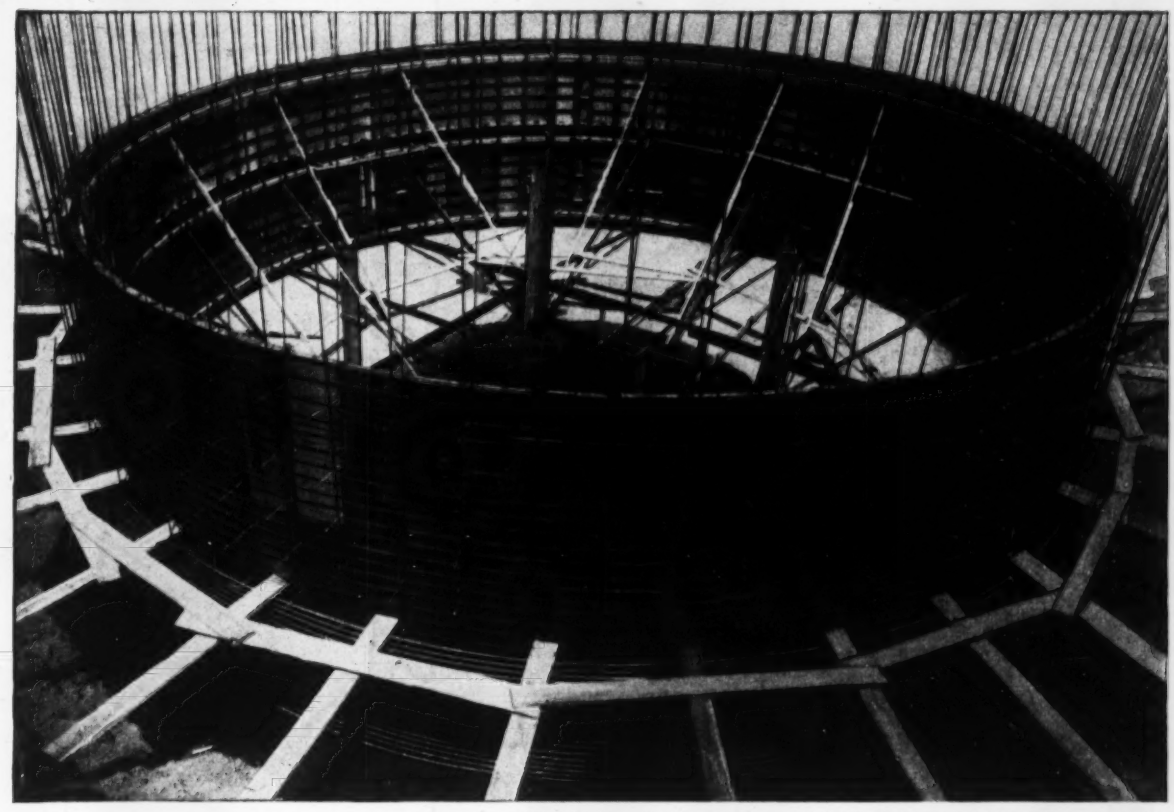
[EDITOR'S NOTE—The statement questioned may be found in "The Mechanics of Engineering Soils," by Capper and Cassie, McGraw-Hill Book Co., 1951, p. 185:

"Experiments have shown . . . for sandy soils the settlement under a given pressure tends to be more nearly independent of the size of the loaded area."

Also, in "Soil Mechanics and Foundations," by Plummer and Dore, Pitman Publishing Corp., 1940, p. 165: " . . . A loading test can be carried on only over a comparatively small area, say 1-ft square. This might be all right in cohesionless material where the settlement is almost independent of the area, but in cohesive material the test would be of little value because the settlement for a given unit load varies almost directly as the diameter."]

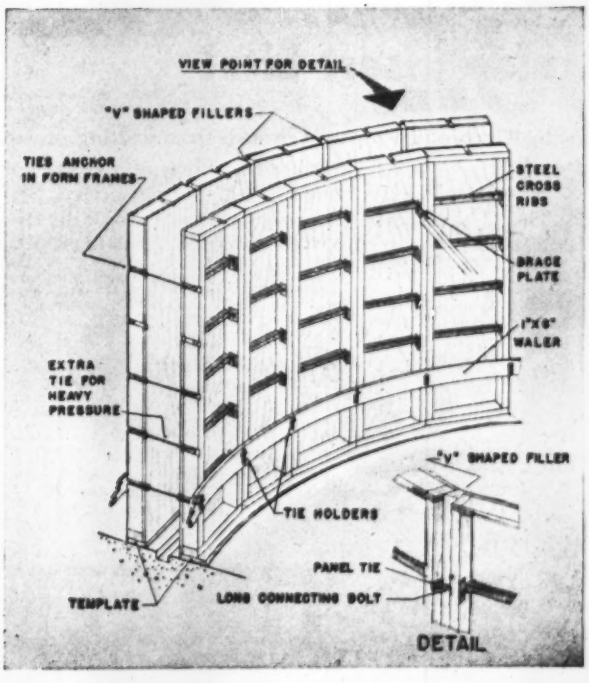
Credit due

SIR: The May 7, 1953, issue of the ENGINEERING NEWS-RECORD contains an advertisement on page 20 by Universal Atlas Cement Company. This advertisement displays a photograph of the



Setting Up Forms for Sewage Disposal Tank, St. Louis County, G. L. Tarlton Co., G. C.

SYMONS FORMS for CURVED WALLS



Symons Rib panels are used with V-shaped fillers at each joint. Sturdy wedge-bolts secure the three pieces together and also hold the ties in place. Curved walers (see photo) or 1" x 6" flat walers (see perspective) may be used for alignment.

Contractors report savings of $5000.00 on forming costs of Sewage Disposal Plants. Engineers are well pleased with the smooth finished walls.

Symons offers a complete engineering service to solve your toughest forming problems. Send us the plans for your next job and a complete layout and cost sheet will be furnished without charge.

Symons

CLAMP and MFG. COMPANY

4265 West Diversey Ave., Dept. F-3, Chicago 39, Illinois

Please send me the items checked:

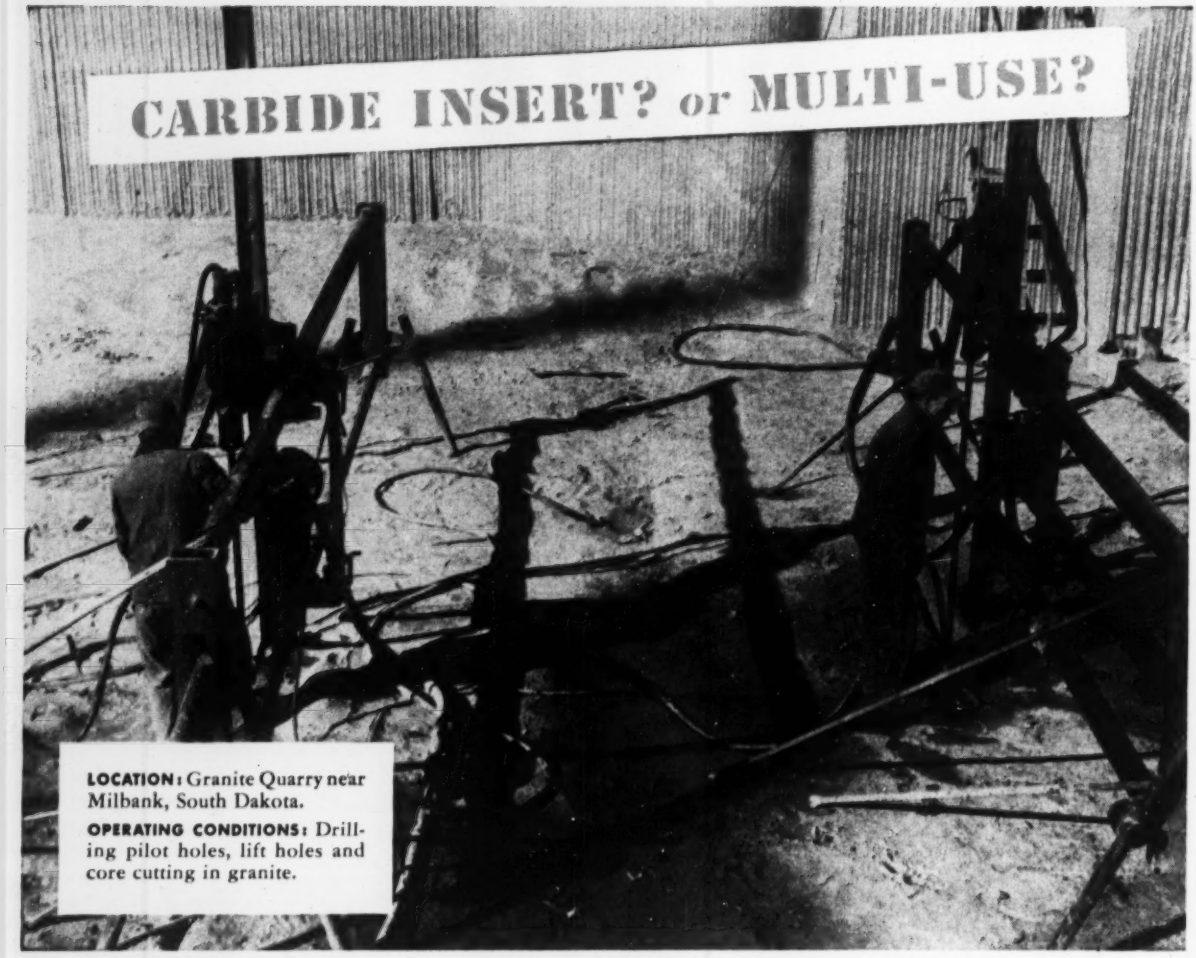
☐ Information regarding Symons Panel Forms

☐ Information regarding Column Clamps, Shores, Bar Ties

Name .....

Address .....

City ..... Zone ..... State .....


CARBIDE INSERT? or MULTI-USE?
LOCATION: Granite Quarry near Milbank, South Dakota.
OPERATING CONDITIONS: Drilling pilot holes, lift holes and core cutting in granite.

Melrose Granite Co. cuts drilling time 25% with TIMKEN® carbide insert bits!

PILOT hole drilling, core cutting, lift hole drilling—the Melrose Granite Company uses Timken® carbide insert bits for all these drilling jobs—and has cut drilling time 25%!

Timken carbide insert bits are always best for highest speed through hard and abrasive ground. They're most economical for constant-gage holes, small diameter blast holes and very deep holes.

But they may *not* always be best for *all* your drilling jobs!

When you're drilling ordinary ground, Timken multi-use bits are most economical! With correct and controlled reconditioning, they give you lowest cost per foot of hole when full increments of steel can be drilled.

Best of all, you can change from Timken carbide insert bits to Timken multi-use bits, easily, quickly—right on the job! As many as 93 different Timken bits in the same thread series fit the same drill steel.

All Timken bits are made of electric furnace Timken fine alloy steel and have the shoulder union developed by Timken that protects threads from drilling impact.

For help in selecting the best bit type for your job, call on the Timken Rock Bit Engineering Service. Write The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".

Timken threaded multi-use rock bit

Timken threaded carbide insert rock bit

your best bet for the best bit ...for every job

TIMKEN

TRADE-MARK REG. U.S. PAT. OFF.

READER COMMENT

John Moses Veterans Hospital at Minot, North Dakota.

In the line beneath the photograph credit for the design of this hospital is given to the U. S. Corps of Engineers. This credit is an erroneous one. The design was by The Veterans Administration.

It will be appreciated if the error be acknowledged in an early issue.

L. H. DITTRICH
Acting Director, Technical Service
Veterans Administration

The right affiliation

SIR: Like everyone else, we enjoy seeing our name in print, on Page 70 of your May 7 issue, but we should like to point out that our affiliation is with the Illinois Institute of Technology and not with the University of Illinois.

W. R. JOHNSON, Supervisor
Research Information Services
Armour Research Foundation

CALENDAR

American Society of Civil Engineers, spring meeting, Casablanca Hotel, Miami Beach, Fla., June 15-19.

American Institute of Architects, Metropolitan Theater, Seattle, Wash., June 16-19.

National Society of Professional Engineers, Sheraton Beach Hotel, Daytona Beach, Fla., June 18-20.

Conference on road and street traffic control, Purdue University, Lafayette, Ind., June 22-24.

American Society for Engineering Education, annual meeting, University of Florida, Gainesville, June 22-26.

Conference on modern highways, Massachusetts Institute of Technology, Cambridge, Mass., June 23-25.

American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall Hotel, Atlantic City, N. J., June 28-July 3.

Summer program in Advanced Strength of Materials, M.I.T., Cambridge, Mass., July 6-17.

City and regional planning programs, Massachusetts Institute of Technology, Cambridge, Mass., Aug. 21-Sept. 4.

RUST-OLEUM®

STOPS RUST!

Rust-Oleum *saves* preparation, *saves* manhours! Just scrape and wirebrush to remove rust scale and loose particles . . . then brush Rust-Oleum 769 Damp-Proof Red Primer *directly over the sound rusted surface.* Rust-Oleum finish coatings in many colors, aluminum, and white provide *double protection.* Specify Rust-Oleum for new construction, maintenance, or re-modeling. Prompt delivery from Industrial Distributor stocks in principal cities.

Resists Rain, Snow, Heat, Fumes, Weathering, Salt Water, etc.

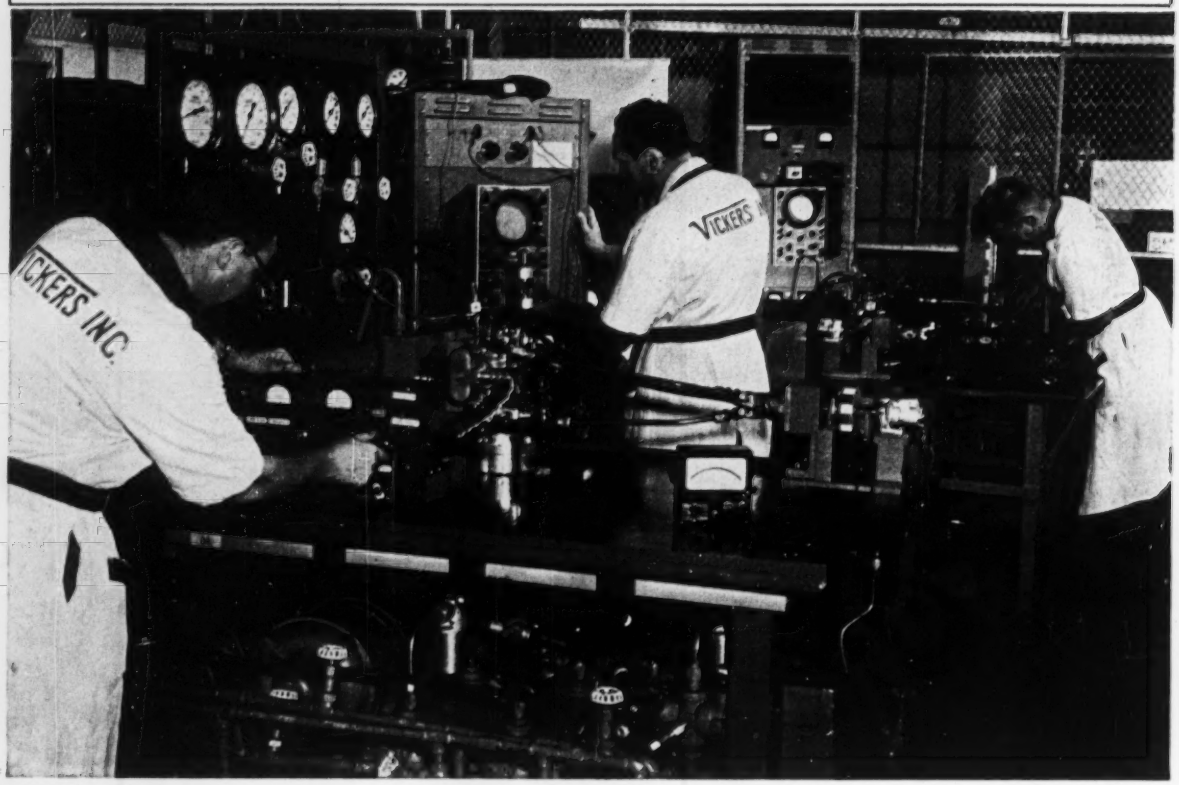
ATTACH TO YOUR LETTERHEAD—MAIL TODAY!

RUST-OLEUM CORPORATION
2698 Oakton St., Evanston, Illinois

- ☐ Have a Qualified Representative Call
- ☐ Free Survey
- ☐ Complete Literature
- ☐ Nearest Source of Supply

ONE OF A SERIES

You Get Many Benefits by Specifying VICKERS Hydraulics



Research | that means improved oil hydraulic equipment

The list of pioneering developments in hydraulics contributed by Vickers research is long and impressive. Among the most important are:

Hydrostatic Relief Valve • Commercial Power Steering • Balanced Vane Type Pump • Flow Control Compensator • Axial Piston Pump and Motor

These are fundamental developments that have been of vital importance in the progress of hydraulics. They are representative of a large line of equipment that, with Vickers experienced application, assures you the best in any type of hydraulic operation. Vickers, with unmatched laboratory and basic research facilities, continues to lead the way in the oil hydraulics industry.

VICKERS Incorporated
DIVISION OF THE SPERRY CORPORATION
1496 OAKMAN BLVD. • DETROIT 32, MICH.

Application Engineering Offices: ATLANTA • CHICAGO (Metropolitan) • CINCINNATI • CLEVELAND DETROIT • HOUSTON • LOS ANGELES (Metropolitan) • NEW YORK (Metropolitan) • PHILADELPHIA PITTSBURGH • ROCHESTER • ROCKFORD • SEATTLE • TULSA • WASHINGTON • WORCESTER

6357

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

THE CONSTRUCTION WEEK

CONTENTS

June 4, 1953 Vol. 150, No. 23

NATIONAL AFFAIRS

Congress going along with construction cuts 21
Tower will provide office, living space 23
Mississippi bridge plan set 23
Louisiana suffers heavy flood damage, but drainage program pays off 24
Canadian engineers review progress in prestressed concrete construction 25
Feasibility of atomic power plants established by industrial surveys 26

LABOR

AFL officials indicted in St. Louis 28
Engineer-scientist groups disagree on wage bargaining 28
Wage agreements in Tennessee construction workers' strike 29
Trends of wages 30

FEATURES

Auto research center buildings are showcases for glass, brick, lighting 33
Construction breeds construction as urban development gets rolling 36
New nerve center in foothills of Rockies dispatches power and water from remote dams 38
Open-air power plants are cooler and cheaper 41

MUNICIPAL

Cleveland project gets boost 48
Fight brews over sale of federal land in Tennessee 53
Redevelopment law upheld by Oregon court 57
Delaware darkens concrete pavement to reduce total paving outlay 60

INTERNATIONAL

Ferry slip unaffected by high tides: Portals allow bridge to rise 34 ft 68
Aerodrome to guard against jet blasts 71
Yugoslav hydro power studied by UN group 75

MEN AND JOBS

Cordon of Oregon: Key man in federal public works policy 76

BUSINESS AND FINANCE

May awards show sizable drop, but some lines are booming 152
Fabricated steel bookings hit two-year peak in April 152
Cost indexes are rising after eight-month lull 153
IH arranges to take over part of Bucyrus-Erie line 154

NEW PRODUCTS

Overdrive for four-wheeled DW20 cat tractors 168
Unloader gives concrete blocks a fast shuffle 171
Attachment converts tractor to bucket loader, backhoe or shovel 174

Reader Comment 9
Calendar 15
Washington Observer 19
Engineering News-Pictures 46
Obituaries 86
Books 94
Legal 99
Material Prices 103
Construction Reports 113
June Scoreboard 151
Editorials 180

- **Buy British, Swiss**—In apparent confirmation of Defense Secretary Wilson's statement that specifications—not price or "Buy American" policy—were responsible for an original turndown, the U.S. government awarded contracts to a British and a Swiss firm for equipment for two power projects.

  Contracts went to British-owned Ferranti Electric, Inc. (for $857,600) for six transformers at McNary Dam; and to the Swiss Pacific Oerlikon Co. (for nearly $2 million) for four generators for Reclamation's Palisades Dam power plant on the Snake River in Idaho.

  Several weeks ago, Wilson had turned down all bids for transformers for Chief Joseph Dam, where the English Electrical Export & Trading Co. had submitted a bid $442,751 lower than the nearest American bid. Although Wilson said he was unhappy with the specifications under which English Export bid, the action brought sharp criticism at home and overseas—on the ground that the U.S. was going back to a pre-war "Buy American" policy. New bids on the Chief Joseph installation transformers were opened this week—with English Electric again a bidder.

- **Jobs hunt men**—One evidence of the continuing shortage of qualified engineers is reported from Reclamation's Region II (California and southwest Oregon):

  Employers—Both private and public—have been literally pounding on the doors of the 68 engineers who will be dropped from regional rolls under cutback orders from Washington. One engineer (with both civil and hydraulic experience) has received a total of five offers. Private and public employers have written or called at bureau offices to list their job vacancies.

- **Water around the bridge**—There's been a lot of water in the Missouri River since 1950—and all of it has flowed past, not under—the $2-million bridge that the Burt County, Neb., Bridge Commission built to connect Decatur, Neb., and Onawa, Iowa. Army Engineers are hopeful again that Congress will appropriate enough money to move the river under the bridge.

  It all started in 1950, when county officials saw a chance to save money by building the bridge in the dry over a channel to which the Army planned to move the river. The bridge was finished in 1951 (except for approaches on the Iowa side). But Congress hasn't put up the money to move the river (about $2.5 million).

- **Clear track for clear span**—Home builders are pleased with the revision of FHA's requirements for partitions in one- or two-unit dwellings that now make it possible to use clear-span roof construction.

  In revision No. 40 to MPR 408-G-3, FHA cancelled the traditional requirement that the top plate of non-bearing partitions must lap over the under plate of the exterior wall—enabling a builder to close in a house when exterior walls are up.

From the MORETRENCH ALBUM of Success Stories

Slips for Ships

PROJECT: Monroe J. Wolfe, New Orleans, La., contractor, had two deep slips to excavate on the New Orleans Industrial Canal. He also needed fill for an adjacent construction project.

ACHIEVEMENT: A single stage of Moretrench Wellpoints extracted 22′ of water from Slip No. 5 (shown, ready for use, in the background of photo above), and 27′ of water from Slip No. 6 (shown under construction in the foreground). Excavation to subgrade proceeded rapidly. The 275,500 cubic yards of material removed made perfect fill. Actual pumping time on this job: 25 days. Pumping Contractor: American Dewatering Corporation, New York.

For immediate results on any wet job—make it Moretrench

MORETRENCH CORPORATION

90 West St., New York 6 | 4900 S. Austin Ave., Chicago 38, Illinois | 7701 Interbay Blvd., Tampa 9, Florida | 315 W. 25th St., Houston 8, Texas | Rockaway, New Jersey

Canadian Representative: Geo. W. Limited, Toronto, Ontario

Look to 1954 as the next big year for federal construction legislation. This year, Congress is having so much trouble voting anything other than the money needed to run the government that new programs have been deferred.

Result is a backlog of construction proposals and sponsors are ready to put their pet projects to vote.

Next year will be a good one for such authorizations for a couple of reasons: Republicans, like Democrats, are likely to be attracted by a chance to vote for a pork-barrel measure; it's a chance to vote something without having to provide the money to pay for it.

•

New Army civil works omnibus authorization bill is one big item already being talked up for the 1954 Congress session. Only authorization up this year is an increase of $75 million for Columbia River projects.

Last omnibus authorization for Army civil works project came in 1950. It approved $1.8 billion of new construction, much of it for multi-purpose dams in the Northwest—including Priest Rapid, Libby Dam, Albeni Falls and The Dalles. Since then, the national legislature has passed only single-project authorizations.)

New Administration proposals on all federal aid to construction will also be up for consideration next year. A new study commission being created will be in session this fall and winter, to come up with its ideas by spring. The Administration is then expected to lay down a new policy on financing highways, hospitals, schools, and the like.

One thing sure is the big federal-aid highway bill. This one has to be enacted next session, so that states can know where they stand when their legislatures meet in January of 1955. Public Works Committee in the House favors continuing present annual federal grants, at a minimum—and is leaning toward authorizing grants to equal the federal revenues from U. S. gasoline tax.

This would be a big increase—perhaps as much as $250 million per year—to be split among the states. The committee favors special attention to the 40,000-mile interstate network.

•

The bottom has fallen out from under Taft-Hartley Act amendments. Congressional leaders have dropped labor from their "must" program. Reason: Eisenhower never has come up with his own ideas for changing the law, and unions foresee that any amendments would make the law tougher, not more liberal. So interest has dwindled.

Jurisdictional Disputes Board reorganization is delayed because electrical and heating contractors insist the joint board be enlarged from eight to 12 members, plus alternates. They want to assure more representation for the specialties.

•

New Atomic Energy Labor Disputes Panel will be headed by Cyrus S. Ching. The panel will be part of the U. S. Mediation & Conciliation Service, which Ching once directed. Other panel members may be Dr. George W. Taylor, former Wage Stabilization Board chairman, and Arthur Ross of the University of California.

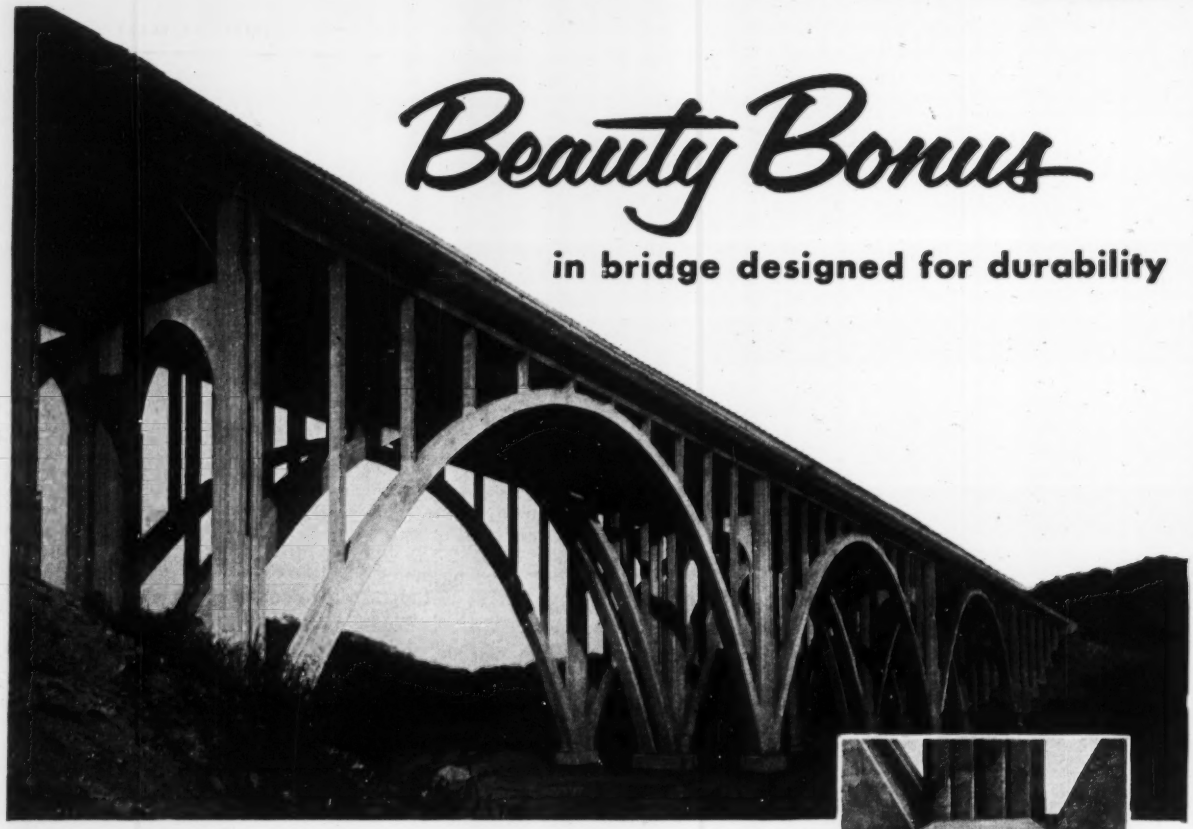
•

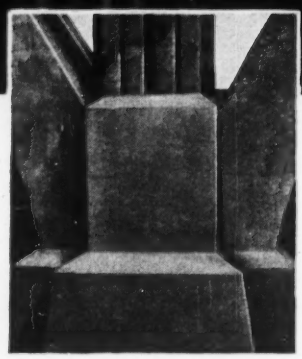
Eisenhower will be lucky to get his excess profits tax extended. The Administration is admitting, privately, that Congress will not go along with the rest of his tax program: continuing the 53% corporate rate beyond March 31 and extending $800-million excise taxes beyond March 31.

Even continuing the excess profits tax is in doubt. Hearings before the House Ways and Means Committee developed hostility to the Eisenhower proposal, and informal polls of committee members indicate the Administration doesn't have the votes for EPT extension. Eisenhower still has to sell his program to the House; if he does, the Senate will go along.

Beauty Bonus

in bridge designed for durability





Superior surface appearance of concrete made with Duraplastic cement shows in this close-up view of an arch pier. Commercial Street Bridge, Penn-Lincoln Parkway, Pittsburgh, Pa. Designed by Pennsylvania Dept. of Highways. Contractor: Dinardo, Inc., of Pittsburgh.

DURAPLASTIC* gives *both* —YET COSTS NO MORE

Superior concrete improves the appearance of the handsome design — and when it's more durable, too, that's even better!

Many engineers and contractors know from experience that concrete made with Duraplastic air-entraining portland cement requires less mixing water for a given slump and minimizes water gain and segregation. As on the bridge shown here, this results in generally improved surface appearance. The concrete is also fortified against the ravages of freezing-thawing weather, and paving resists the scaling action of de-icing salts.

There are more reasons why construction men like to build with Duraplastic. It gives a more plastic, more uniform, more workable mix that aids proper placement. That's why you'll want to specify Duraplastic on your jobs!

Yet, with all its advantages, Duraplastic sells at the same price as regular cement. Complies with ASTM and Federal Specifications. Your inquiries are invited. Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N.Y.

OFFICES: *Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.*

*"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.

ATLAS®

DURAPLASTIC

AIR-ENTRAINING PORTLAND CEMENT

ENR-D-141-R

Makes Better Concrete at No Extra Cost

"THEATRE GUILD ON THE AIR" *Sponsored by U. S. Steel Subsidiaries, Sunday Evenings—September to June*

Congress backing heavy cuts in construction spending

House scores surprise by chopping at Army Engineer appropriations beyond committee recommendations

The House last week slapped its seal of approval on a 40% slash in Army civil functions. In fact, it outdid its Appropriations Committee by cutting nearly $4 million more out of a bill that already had shrunk from Truman's $660 million to the committee's $399 million.

This was the first indication that Congress is not inclined to rescue the federal construction programs from their slated role as the chief source of fiscal 1954 economies. And, this week the Senate Appropriations Committee provided further evidence of the way the tide is running.

The Senate group did some restoring of construction cuts in the State, Justice, and Commerce bill by putting in $12.5 million for federal aid to airport construction but it cut more than that by reducing funds for federal aid to highways by $25 million, forest highways by $1 million, and access roads by $2 million below the House figures.

• **Expectations upset**—Veteran observers had expected House members to team up and restore some of civil functions cuts made by the committee (ENR May 28, p. 21). Eisenhower's revised budget had slashed Truman's request by more than $80 million; the House committee then cut much deeper, lopping off another $80 million. General construction funds in the bill went down step-by-step with the overall cuts—from $491 million to $332 million to $254 million.

Instead of adding to that $254 million, the House reduced it to $250 million. Every amendment to restore funds was knocked down except one—$400,000 for the Gowanus Canal in Brooklyn, N. Y. And the House hit Garrison Dam for a further $4-million reduction below the commitee cut, eliminating dikes to take care of a higher reservoir level.

None of the other floor motions to restore projects or vote added funds got anywhere. House members just weren't playing ball on the old vote-trading basis. The majority went down the line for economy, blocking all attempts to open up the money bill to more projects.

• **Economy bloc strong**—Neither Tuttle Creek Dam nor Table Rock Dam got any funds in the House-passed bill. They were omitted along with 42 other projects struck out by the committee.

And the House approved the committee cuts for the big multi-purpose projects, from the Columbia River to the Apalachicola.

With the civil functions bill clipped to minimum figures, there's no mistaking the intent of the House to force rigid construction economies in 1954 appropriations. The economy bloc in the Senate is given added reason for holding the line. Any funds restored there will face a hard fight when House and Senate versions go to conference. Construction is slated to pay the major price for money savings in the fiscal year that starts next month. The cuts are coming out of funds for all forms of public work—military construction, reclamation, hospitals, airports and highways, in addition to Army civil functions.

• **Biggest tests yet to come**—The table on page 22 shows the progress of appropriations for construction as they move through Congress. So far, the action has been limited almost solely to the House but the Senate is showing little inclination to follow its usual practice of restoring part or all of House-imposed cuts.

The biggest tests on proposed construction cuts are yet to come. The House Appropriations Committee has yet to report out bills containing funds for military construction, atomic energy, Tennessee Valley Authority and veterans programs. (AEC, TVA, and VA money bills are expected out of the House committee next week. Military construction budget isn't expected until the following week, at the earliest.)

These programs are being reduced sharply by the Administration before they are sent to the Hill. Even so the subcommittees handling the appropriations are threatening to go beyond the Eisenhower recommendation. At least one or two of the seven steam plants remaining in funds for TVA are sure to be cut out by the House. Atomic energy will be lucky to get through Congress with the $166 million for plant and equipment recommended by the Administration.

• **Carryover funds cushion shock**—The big cutbacks that are in the making don't mean necessarily that federal construction will slow to a trickle in

(*Continued on page 22*)

Philadelphia to put contractors under performance rating system

Philadelphia, Pa., is adopting a system of performance ratings for contractors and subcontractors who engage in city construction work.

The new system will be put into effect before the city undertakes a $79-million capital improvement program planned for this year, according to Robert K. Sawyer, the city's managing director.

Demand for the reform stemmed from the recent city council investigation of $17-million playground and recreation center program. The probe disclosed evidence of wholesale fraud, estimated to involve about $4 million.

The performance rating scheme follows close on the heels of another reform measure, requiring architects who seek city contracts to submit to open competitive tests for assignments.

Performance records will include: date a construction job is scheduled to begin and the actual starting date, assessment of responsibility for any delays, date of scheduled completion and actual completion date. Contractors will be rated on cooperation, ingenuity in obtaining materials, efforts to keep the job moving, quality of workmanship and efficiency of supervisory help.

Spurring completion of the rating system was a recent appeal by a contracting firm against being barred from bidding on 11 sewer projects. The city imposed the ban because of alleged faulty work done at new playgrounds.

BOXSCORE ON CONSTRUCTION APPROPRIATIONS

(in millions)

Agency	Fiscal 1953	Truman budget	Latest
Commerce Dept.			
Bureau Public Roads			
Fed. aid to highways	$325	$540	$475#
Forest highways	18	20	14#
Inter-Am. Highway	1	8	1†
Access roads	15	20	5.5#
Rama road	—	2	1†
Fed. airport program	19.3	30	12.5#
Interior Dept.			
Reclamation Bureau	181.8	193.8	108.4†
Bonneville power adm.	66.5	55.2	38.3†
Natl. Park Service	15	17.9	13.4
Alaska public works	13.2	15	14.3
Alaska road const.	17	18.4	10
Defense Dept.			
Military construction			
Army Engineers	585.5	15	—§
Air Force	1,200	700	400*
BuDocks	36.3	32.4	31.2*
Civil Functions			
Army Engineers	565.9	491.3	250†
Welfare Dept.			
Public Health Service			
Hospital grants	134.7	94.8	69.7†
School construction	195	—	—*
Independent offices			
Atomic Energy Comm.	3.270	436.3	166*
Tenn. Valley Authority	336	254.3	190.8*
NACA			
Construction & equipment	16.7	14.6	7.2‡
Capital grants for slum clearance & urban redevelopment	8	20	20‡
Veterans Administration			
Hospital facilities	49.7	92.3	—§

* Eisenhower budget
† House action
# Senate committee action
‡ Senate action
§ No Eisenhower figure yet

fiscal 1954. Most of the programs where the proposed slashes run the deepest—military construction and atomic energy—have large carryover of funds that will enable work to go forward next year at little change in volume.

The threat of the cutbacks is to programs one and two years away. And by that time Congress is likely to have recovered from its economy binge. The pressure for public works funds is bipartisan. Harbor improvements on the Ohio River and flood control in the Missouri Valley appeal as strongly to Republican constituents as to Democrats and few politicians can resist their vote appeal at the ballot box.

Controversy over Glendo Dam ends

Five years of negotiations finally have ended controversy over the Glendo Project, a proposed $50-million dam across the North Platte River in eastern Wyoming and a key element of the Pick-Sloan Plan.

The proposed Reclamation Bureau project was the subject of a 10-year legal battle among Colorado, Nebraska and Wyoming. The fight ended in 1945 with a Supreme Court decree allocating the North Platt's flows.

Under the agreement, Nebraska joined Colorado and Wyoming in giving its approval to the Glendo Project as planned by the Bureau of Reclamation. Nebraska also joined its sister states in a motion to the Supreme Court asking a new formula for dividing the water of the North Platte River. The next step is presentation of a plan report to Congress.

Glendo Dam, to be located four and a half miles southwest of Glendo, Wyo., will store 800,000 acre-ft of water and, with the Fremont Canyon power plant, provide 306 million kwh of electricity annually. Its power will almost double hydroelectric output of the North Platte River and will pay major dividends in providing irrigation water and flood control, Bureau of Reclamation officials said.

Interior to study plea for water project sale

Secretary of the Interior Douglas McKay has written to California's Gov. Earl Warren giving assurance speedy attention will be given to California's proposal for site acquistion of the federal government's Central Valley project (ENR April 9, p. 24).

Warren and other state officials conferred recently with McKay in Washington on the proposal. McKay's letter said, in part:

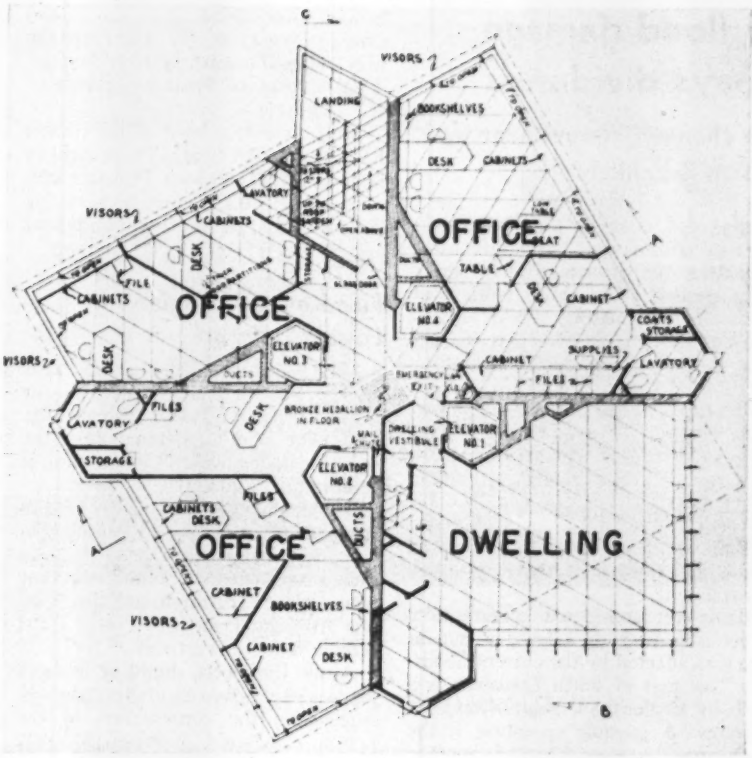
"Before a sale and transfer of this kind could be consummated, congressional authorization and approval would be necessary. . . . We must take as our starting premise that the federal government must be saved free from any financial loss, which means that the payment must be at least in the amount of the federal investment less any liquidation that might have taken place up to the time of the sale. Also, the authorizing legislation would in all probability have to be general and broad enough so that it would provide for similar sale and transfer anywhere in the U.S."

Water diversion bill killed in Nebraska

An effort to change Nebraska's water-use law to permit diversion from one stream to another has been defeated in the state legislature for the third time in 10 years.

The decisive 24-10 defeat of the bill was a blow to Central Nebraska (Tri-County) Public Power and Irrigation District's plans (ENR Jan. 29, p. 22). Tri-County, which now waters 125,000 acres in three Nebraska counties with water from the Platte River, sought to irrigate an additional 130,000 acres. Although the two tracts share the same table land, the 130,000 acre block is located in the watershed of the Republican River.

The legislature's action also is a setback for the Bureau of Reclamation's plans to bring the state 1,610,000 acres of new irrigation and 766,000 acres of supplemental irrigation. For, 34% of the irrigation in the Bureau's plans involves diversion. Water would be brought from the Loup sub-watershed where water is in surplus supply, to the broad valley of the Platte, which has more land than water.



Tower to provide office, living space

18-story, 45 ft. square structure designed by Wright to consist of four equal, independent quadrants

Contracts were to be let this week for construction of an 18-story combination office and apartment building designed by Frank Lloyd Wright for the H. C. Price Construction Co. at Bartlesville, Okla.

Incorporating many advanced concepts of engineering and architecture, it is believed to be the first skyscraper ever designed for such dual purpose. Construction is scheduled to begin in mid-June and is expected to be completed in the summer of '54.

The tower, 45 ft square, will rise 186 ft above the ground and will be composed of four equal and independent quadrants—three to be occupied by offices and one by apartments.

It has been estimated the structure will weigh only one-seventh as much as a standard building of similar size because of its design and materials.

Floors and walls at each level will be cantilevered from four concrete columns and interior bearing walls, set well back from the exterior walls. Hollow triangles or quadrilaterals in section, these walls will be about 18 ft long and 10 in. thick. They will be founded on a 3-ft-thick concrete platform 25 ft below grade. Plumbing, wiring, air-conditioning conduits and rubbish chutes will be enclosed in the hollow columns.

Walls will be made of concrete and glass.

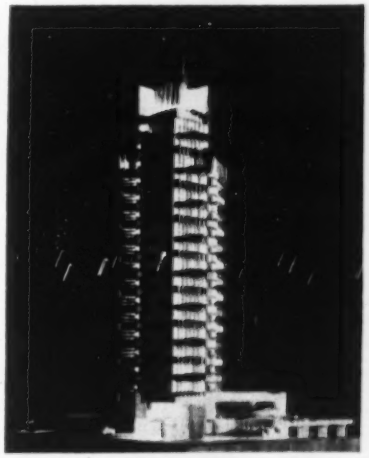
Floors will be cast-in-place concrete.

Metal louvers will shield the extensive glass surface. They will be set vertically in the apartment quadrant on the southwest corner, where the sun's rays are most effective.

The 20-in. wide vanes will be horizontal across the tower's other three quadrants where the offices are located. They will admit only indirect light and will protect the windows from wind and rain. The windows will be of gold-tinted glass to diffuse the sunlight.

The structure will contain a basement and sub-basement, the latter housing equipment for automatic elevators. The basement will have incinerator and garbage facilities, laundry and storage rooms.

Entrance to the office and apartment quarters will be by separate elevators and through separate lobbies.



PRICE TOWER proposed for construction in Bartlesville, Okla.

Specifications revised for Mississippi span

Controversy over specifications for a new $57-million 3,000-ft-long bridge across the Mississippi River at New Orleans was settled last week, enabling a revised application for the Louisiana toll project to be submitted to the Army Engineers.

Revised plans call for an increase in the horizontal clearance from 1,400 ft to 1,800 ft, which overcomes the principal objection of Maj. Gen. S. D. Sturgess to the original application (ENR April 2, p. 22). He held that the 1,400-ft clearance would constitute a navigation hazard.

The vertical clearance also has been increased from 135 ft to 150 ft. This is a compromise revision to which the New Orleans Dock Board has reluctantly agreed. In support of port interests, it had been holding out for a vertical clearance of 175 ft.

The dock board is still dissatisfied with the plan because it means having one pier in the river. However, it has decided not to file an objection with the Army Engineers on this score. An earlier bridge plan had called for two piers in the river.

Revisions have increased the estimated cost of the span by $9 million—bringing it to the limit of present financing authorizations. A suspension bridge such as the dock board preferred to avoid having a pier in the river, therefore, would have required new money authorization and involved a long delay.

The bridge is to be financed by a bond issue backed by tolls and a special highway fund. Construction will be in the hands of the state's Mississippi River Bridge Authority.

A $30-million bridge approach project will involve construction of an elevated expressway on the New Orleans side and a ground-level expressway on the west bank of the river.

Louisiana suffers heavy flood damage, but drainage program pays dividends

Experience will give impetus to channel improvement work but demand for levee construction is unlikely

Although flood waters left heavy damage in southwest and south central Louisiana as they receded last week, an extensive federal-state drainage program is credited with having prevented a far greater toll. No stream with a levee system contributed to the flood.

Greater emphasis on drainage work, rather than proposals for new levees and flood control projects, seems likely to be the outcome of flood surveys now being made by the Army Engineers and state agencies.

A three-week rainfall equaling that of a normal seven-month period caused flood conditions of varying degrees in nearly every section of Louisiana. But, most damage was concentrated in 22 southern parishes.

• **Rainfall up to 36 inches**—Total damage to farm, industrial, commercial and residential property may run to $100 million. Crop damage has been estimated at more than $45 million. Highway damage has been placed at about $3 million.

Most of the heavy rainfall was in an area to the west of a line running from Shreveport in the northwest to New Orleans in the southwest. Rainfall measurements for scattered points from April 25 to May 18 ranged from 16 to over 36 inches.

The area has three principal outlets to the sea: (a) along the Red River basin from Shreveport in the northwest to the Mississippi River in the east central section; (b) along the Calcasieu River basin in southwest Louisiana to the Gulf of Mexico via Lake Charles; and (c) the Boeuf-Cocodrie basins from central Louisiana to the Gulf.

• **Few levees involved**—Only the Red River basin has levees although not a complete system. Flooding along the Red occurred near its juncture with the Mississippi, where there is no levee along the left bank.

The main flood was further south and to the west in the Calcasieu and Boeuf-Cocodrie basins, neither of which is protected by dikes. But, these two basins are focal points of the widespread drainage program being undertaken by the Louisiana Department of Public Works with the cooperation of the Army Engineers.

The drainage pragram entails maintaining and enlarging the channels in the key streams and building control structures for diverting water where it is needed. The state, with local agencies participating, builds drainage ditches and lateral canals feeding into the key streams.

• **Drainage work pays off**—A spokesman for the Army Engineers New Orleans district office said this week that without the drainage system the flood waters would have remained for 60 days. Now, he declared, all water will be drained off in two or three weeks and most of it will be gone in a week.

It is not considered economically practicable to build a levee system in the area affected by the current floods. For this part of south Louisiana is a web of bayous and small rivers and streams. A possible exception is the Calcasieu River, on which a report is now being prepared.

The drainage program is a development of the state's natural drainage system and provides for the ultimate and complete disposal of surplus water into major streams, deepened, widened and otherwise improved, if required, by the Army Engineers.

The plan provides that the state Public Works Department, at the request of a policy jury, make field surveys for parish-wide drainage systems and furnish plans and cost estimates.

Thirty parishes are now participating in the program. Improvement of existing channels and creation of new canals totaling 5,261 mi has been accomplished at a cost of $15 million, exclusive of engineering services and bridge and culvert work.

Emergency levee limits damage to Texas City

Focal point of damage on the Texas side of the flood area was at Orange on the Sabine River. Here, a levee built at the time of the 1945 flood, was over-topped and failed in several places.

A five-mile, 12-ft-high emergency levee of dirt and sand bags was build 300 yards behind the old levee. It was extended along the north side of the city, tying with the Southern Pacific roadbed.

The emergency levee held and damage to Orange was limited primarily to lower story flooding of houses and stores. Deweyville, 10 miles up the river, suffered similar property damage. Total damage in Texas was estimated at $2 million.

John Simmons, head of the Sabine River authority, said the emergency levee was built in about 38 hours with more than 18,000 volunteers manning all available earthmoving equipment and placing about 350,000 sandbags.

Flood again disrupts Folsom Dam project

High water again has disrupted work on the Folsom Dam Project on the American River near Sacramento, Calif. The rebuilt cofferdam above the dam site failed under the pressure of a snowmelt runoff.

The cofferdam had been reconstructed after a devastating washout in January when heavy damage was caused to the dam works and adjoining power plant excavation and the Nimbus Afterbay Dam and Power Plant several miles downstream.

Army Engineers, building Folsom Dam, and the Bureau of Reclamation, supervising the construction of the power plant and Nimbus Afterbay works, were unable to make an immediate estimate of the new damage.

The washout caused water to pour over a concrete retaining wall around the power plant construction immediately below the Folsom Dam and washed out a protecting cofferdam at the Nimbus construction.

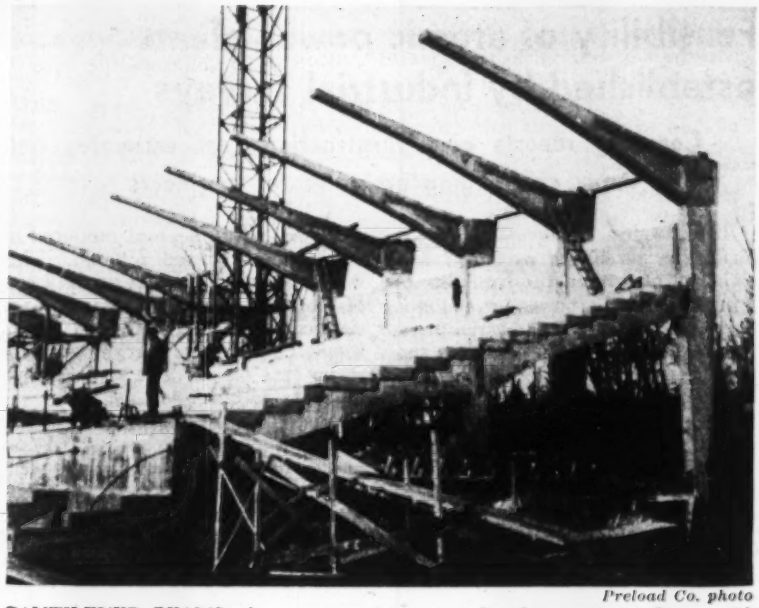
Army Engineers are still confident the project can be completed by the original December, 1955, target date.

Gen. J. R. Hardin gets Mississippi River post

Brig. Gen. John R. Hardin was sworn in this week as president of the Mississippi River Commission, following nomination by President Eisenhower and confirmation by the Senate. Hardin also becomes Lower Mississippi Valley Division Engineer, with headquarters at Vicksburg, Miss.

Brig. Gen. David H. Tulley takes Hardin's place as Assistant Chief of Engineers for Military Construction. Tulley was formerly chief of the Construction Branch, Engineering Division, U. S. Army in Europe, and—prior to that—engineer staff officer for Joint Task Force 7 that conducted the Eniwetok atomic bomb tests in the spring of 1948.

In the dual posts at Vicksburg, Hardin succeeds Brig. Gen. Peter A. Feringa, who has retired to become assistant to the president of New Orleans Public Service, Inc., a power, gas and transit utility company.



Preload Co. photo

CANTILEVER BEAMS of precast concrete are anchored to precast columns with prestressing cables to support the roof of a stadium in Sherbrooke, Quebec.

Canadian engineers review progress in prestressed concrete construction

Garage built with Bailey bridge units for roof girders, factory-made highway spans among leading projects

A review of Canada's progess in prestressed concrete construction highlighted the 63rd annual meeting of the Engineering Institute of Canada that was held at Dalhousie University, Halifax, N. S.

Structures involving novel design features and building methods were described in six technical papers.

• Roof joist application—A. M. Lount, of Ontario Hydro, reported on an ingenious application of prestressing to roof joists. Faced with a steel shortage and an urgent need for a large garage at its Islington service station in Toronto, the consulting engineering division of Ontario Hydro designed a building with Bailey bridge units for long-span roof girders. These support 1,200 prestressed concrete roof joists with a span of 17 ft.

The need for economy prohibited use of normal-type anchorage units; so a design was evolved combining the advantages of prestressing with the low cost of concrete blocks. An I-shape design for the joist cross-section was developed, with prestressing bars set along the intersections of the bottom flange and web and grouted into place throughout the length of the beams.

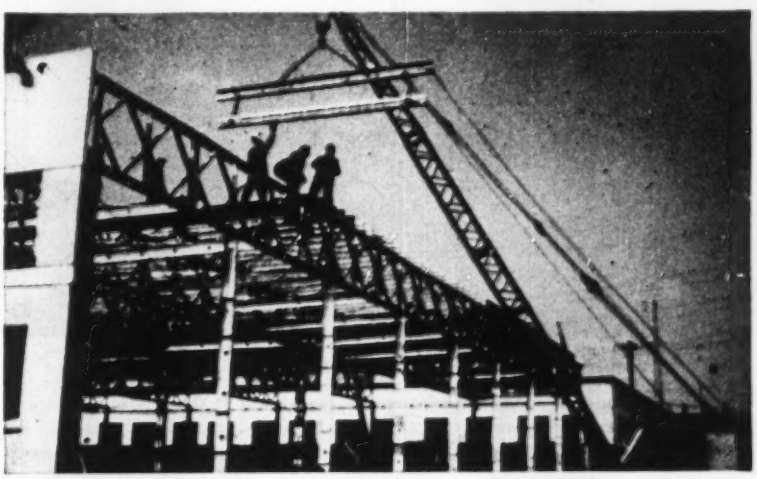
An assembly-line system was set up for joist manufacture. Several joists were made as one unit; then, bars were cut to separate the members, after prestressing and grouting had been carried out.

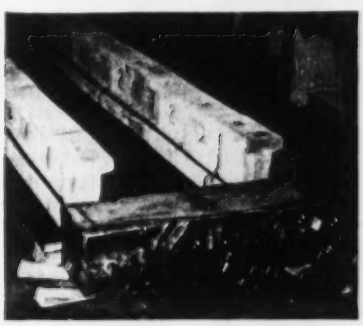
• Sports arena projects—P. A. Benn, general manager of Pre-compressed Concrete Engineering Co., Ltd., Montreal, described two large building projects constructed by his firm. For a new Army Ordnance depot at Cobourg, Ont., four single-story buildings, 200x500 ft in plan, have been erected. Main roof beams were composed of 50-ft precast units, which were linked together when placed on the columns by prestressing with cables. Thus were formed 100-ft span beams, continuous over the central column support.

A sports arena at St. Thomas, Ont., was the second project described by Benn. For this job, bow-shaped roof girders with a clear span of 130 ft were constructed. They were prestressed on the ground beneath their eventual location, and then jacked into final position.

Another sports arena job was described by G. M. DeMarque, chief engineer of the Preload Company of Canada, Ltd., Montreal. This arena is at Sherbrooke, Que. Sloping beams support the bleacher seats, which were made of pretensioned U-shaped beams precast in Montreal and transported 100 mi to the construction site.

The rear columns also were precast





I-SHAPED PRESTRESSED JOISTS, above, have prestressing bars placed at intersections of web and bottom flange and then grouted in place. Crane erected joists on top of Bailey bridge roof trusses are shown in picture at left.

units, weighing about six tons each. Prestressing cables at the tops of the columns were threaded through the ends of prestressed cantilever canopy beams to anchor them.

• **Alberta's bridge factory**—One of the largest precasting operations yet carried out in Canada was devised to cope with the urgent need of the Province of Alberta for replacing a large number of short-span highway bridges. L. G. Grimble, chief bridge engineer of the Alberta highway department, and Prof. R. W. McManus, of the University of Alberta, reported on a plant set up in Calgary, which last year completed more than 200 precast bridges for erection in all parts of the province.

Precast units were trucked distances up to 50 mi and shipped by rail for longer hauls. Overall costs, including trucking and erection, for the bridges completed in 1952 were $6.96 per sq ft of deck. A program amounting to more than $1.5 million is planned for similar bridge erection to be carried out during 1953.

• **What about the difficulties?**—Sessions on prestressed concrete were presided over by E. P. Muntz, consulting engineer for Ontario Hydro, who is a pioneer in this field in Canada.

Presentation of papers was followed by a summary by R. F. Legget, director of building research, Ottawa, who noted that since prestressed concrete has established itself in Canadian engineering practice there was also need for discussion and exchange of information on problems and difficulties encountered in this type of construction.

Legget urged that economic comparisons be made on the same fundamental bases for design as for all competing structural materials and methods. And, he sought to stimulate consideration of such questions as fire resistance, effect of prestressing on concrete strength, and the limitations that are imposed by patent rights.

Neils Thorsen, of the Freyssinet Co., New York City, in a general review of new developments in the prestressed concrete field, cited examples of work being done in the United States, Europe and South America.

• **New president**—Ross L. Dobbin, who for many years has been the general manager of the Peterboro, Ont., Public Utilities Commission, was installed as the new president of the Engineering Institute of Canada, succeeding Dr. J. B. Stirling of Montreal.

Feasibility of atomic power plants established by industrial surveys

Company reports give construction cost estimates and pose many challenging problems for engineers

The Atomic Energy Commission finally has taken the wraps off four technical reports on the feasibility of producing electric power from atomic energy. Four pairs of industrial firms, working as teams, completed the surveys last October.

Significant conclusions gained from the releasable portions of the reports were:

1. Atomic power plants could be built—started immediately and to be completed within three to five years.

2. These plants would produce substantial amounts of electric power. But, at first, they also would have to produce fissionable materials, like plutonium, and sell them to the government in order to break even on the enormous capital investment required in such construction.

3. Sooner or later, atomic power by itself would be competitive with power produced from other fuels—without any need for tie-in sales of plutonium.

• **Steam generation proposals**—It became known also that all four groups proposed to harness heat produced in a controlled atomic reaction. This would be done in one of several types of atomic furnaces, or reactors. Special heat exchange systems and boilers would employ the heat to generate steam that would drive more or less orthodox turbines and generators for electric power production.

But details of the construction and layout of all this equipment were kept secret by AEC. The commission's chief worry was to keep the wraps on construction and operating costs of reactors, which also produce fissionable materials for bombs. The reports contained a considerable amount of such data.

Nonetheless, the reports caused considerable stir among electric utilities and related industries. Here's what has happened since the reports were completed.

One of the four original study groups, Dow Chemical Co. and Detroit Edison Co., contracted with AEC for further formal investigations. The objective is to work out details preliminary to actual construction of a

ANY TAKERS? Scale model of proposed atomic power pilot plant, for which North American Aviation, Inc., has completed a design, is described by Dr. Chauncey Staff, left, director of the company's atomic energy research department at Downey, Calif. Looking on are J. L. Atwood, company president, and J. H. Kindelberger, board chairman and executive officer, North American Aviation hopes to find a customer for the design among the groups of industrial firms now engaged in studying atomic power.

power reactor, including selection and testing of materials and components.

• **Many firms participating**—With AEC approval, the Dow-Detroit groups have been joined by twenty-five additional firms. Most of these affiliates are electric utilities, but among the others are Ford Motor Co., Bendix Aviation Corp., Allis-Chalmers Manufacturing Co., and several engineering firms, which are putting something over a million dollars a year of their own funds into the study. Government participation consists largely of making available AEC testing facilities and technical documents.

Another team—Commonwealth Edison Co. and Public Service Co. of Northern Illinois—has made a second report to AEC, which still is secret. These two firms are continuing their investigations with the help of AEC's Argonne National Laboratory, near Chicago.

Monsanto Chemical Co. and Union Electric Co. of Missouri have made several more or less informal proposals to AEC for starting work on a reactor that would produce plutonium for the government primarily, and power as a by-product. This was the type of plant AEC asked Monsanto-Union and the other four teams to look into originally. But AEC no longer is interested greatly in such a plant—largely because its own expansion of production is providing ample fissionable materials to meet present bomb requirements.

Pacific Gas and Electric Co. and Bechtel Corp., the fourth team, has continued its original studies. And a fifth group, Pioneer Service and Engineering Co. and Foster Wheeler Corp., have just started their own power study.

• **Plant location problems**—The reports give a good picture of some of the difficulties now stumping scientists and engineers. For example, Commonwealth Edison-Public Service investigated possibilities for two types of power reactors. One would be cooled by helium. The plant would require 45 acres for underground storage of the gas. The plant itself would require 100 acres, exclusive of additional space for isolation.

The gas-cooled reactor plant would cost a total of $40 million. A heavy water-cooled reactor plant studied by the same group would cost $118 million, more than $48 million of which would go into the reactor and the deuterium cooling facilities. The companies figured it would take four and a half years to build the gas-cooled job, five and a half to six years to put up the deuterium-cooled plant.

Most interesting feature of the Dow-Detroit plans, next to a proposal to use a high temperature reactor, are suggestions on plant sites. The team suggested that the reactor be built in a shipyard, which would have exclusion features, and then be mounted on a barge, which could be anchored or sunk within reasonable distance of a utility system.

Dow-Detroit gave no estimates of construction costs, but after making their report to AEC, the firms have been investigating possibilities of first building only a reactor and heat exchange system. The heat could be dumped into the Great Lakes or a similar body of water, initially. Boilers and generating equipment could be added later, if feasible. The initial reactor project could be built for $10 million or less, according to the opinion of the companies.

Monsanto-Union Electric drew preliminary estimates for two plants, one to cost $26 million and produce 210,000 kw., the other to cost $61 million and have a capacity of 554,000 kw.

• **Pilot plant design offered**—North American Aviation Inc., which has been working for the AEC seven years on reactors for guided missiles and planes, announced this week that it has completed a design for a pilot plant for generation of electric power from atomic energy.

The company is hoping to find a customer for the design among the industrial firms now making surveys. The proposed $10 million pilot plant, which would generate 8,000 kilowatts, would take about two years to build. About as much time would be necessary to complete tests before constructing the full-scale 150,000 to 200,000 kilowatt plant, estimated to cost $40 million.

• **Legislative revisions sought**—All this activity has created the first serious demand for revision of the Atomic Energy (McMahon) Act since it became law in 1946.

As the act stands, only the government can own fissionable materials, the vital fuel, or atomic reactors. Another major barrier is the patenting provision, which makes it virtually impossible for a private citizen or firm to obtain an outright patent in the reactor field of development.

AEC itself has recommended modification of such sections of the law. It is backed by important industrial groups, including both power producers and power consumers. There is regional support from power-hungry areas like New England, where the New England Council has plumped for early development of atomic power.

Andrews Field

Joint civilian-military use agreed; $24 million worth of new facilities needed

Nine scheduled airlines operating out of Washington agreed this week to a CAA-sponsored plan for joint use with the military of Andrews Air Force Base as a second commercial airport for the nation's capital.

The airlines okayed switching part of their traffic to the airport on the Maryland side of the Potomac on the condition that the government would provide "proper facilities" for safe and economic operations—which meant tower control, terminal facilities, ramps, taxiways and access roads.

Talks began immediately between the CAA and the Air Force to work out construction plans for the additional facilities. CAA will probably foot most of the bill for added expansion, though the Air Force is planning new construction for the base to handle strictly military operations under the joint use. Total civilian costs will probably amount to about $24 million.

Studies by CAA made last year showed that Washington National Airport had reached full capacity during peak traffic hours. And indications were that the major scheduled airlines had to forego adding new flights due to congested traffic. So, plans were adopted for construction of a second airport for the capital at nearby Burke in Fairfax County, Virginia. But the proposed $34-million Burke airport became a victim of the economy drive. As an alternative, Commerce Secretary Sinclair Weeks proposed joint civilian-military use of Andrews Field, only about 13 mi from the downtown area. This week, at a meeting in Washington with CAA Administrator F. B. Lee, the airlines put their stamp of approval on the plan.

But biggest surprise out of the meeting was that Andrews would not be available for 18 months yet—or until such time as the added facilities are built. Word was that the airlines wanted full facilities at the field before beginning operations—refused to operate on a makeshift basis even though National Airport is overcrowded right now.

Civilian operations at the field—once they begin—will be limited to 5,000 landings and departures per month until a second system of parallel runways is constructed, complete with taxiways and hard stands. Once this is completed civilian operations will be upped to 15,000 per month—less than half of what Washington National now handles.

AFL officials indicted in St. Louis

Grand jury returns indictments charging 12 construction trade union leaders with extortion and racketeering

Twelve officials of AFL construction trade unions in the St. Louis, Mo., area have been arrested on labor racketeering indictments returned last week by a federal grand jury.

The indictments charge violation of the federal anti-racketeering law by extorting or attempting to extort money from contractors in interstate commerce.

Indicted and arrested were:

- Lawrence L. Callanan, ex-convict business manager of Steamfitters' Union, Local 562, which controls the eastern half of Missouri, except for a few small cities.
- John L. Lawler, a business agent of the union and Callanan's chief lieutenant.
- L. A. Thompson, business representative of Teamsters & Chauffeurs Local 574.
- Carl Bianchi, outstate business representative, Local 513, Hoisting Engineers.
- Richard M. Secor, outstate business representative, Local 110, Hod Carriers, Building & Common Laborers.
- Paul H. Hulahan, business agent of Local 42, Hod Carriers, Building & Common Laborers.
- William Poster, business representative of Local 110 of the same union; also secretary-treasurer of the eastern Missouri Laborers' District Council and administrator of the Common Laborers' Welfare Fund.
- Peter R. Weibert, business representative, Local 513, Hoisting Engineers.
- Peter P. Higgins, Sr., president and business representative, until removed recently, of Local 682, Building Material & Construction Chauffeurs.
- Harry J. Hagen, business representative, Lathers' District Council and first vice-president of International Wood, Wire & Metal Lathers' Union.
- Vincent J. Lee, international vice-president, Operative Plasterers' and Cement Masons' International Association, and a former member of the St. Louis City Plan Commission, official advisory body.
- William H. Anderson, a business representative of Plasterers' Local 3 in the same association and former president of the AFL Building & Construction Trades Council.

• Indictments—Hulahan remained in jail after failing to provide sufficient bond, set at $50,000, since he was named in two indictments. Thompson remained in jail at Jackson, Mo. The other 10 were released on bond. Lawler's bond also was set at $50,000; the others were set at $25,000.

One indictment charged Callanan, Lawler, Thompson, Bianchi and Secor with extorting or attempting to extort $8,000 from the Brown-Lite Co., a subcontractor on construction of a natural gas pipeline for the Arkansas-Missouri Power Co.

A second indictment named Lawler and Hulahan, together with Poster, Weibert and Higgins, charging that they obstructed and attempted to obstruct interstate commerce "by extortion" of $50,000 from the Frazier-Davis Construction Co. The same five men also were charged with conspiracy to violate the anti-racketeering statute through interference with the pipeline project.

Hulahan and the late Joseph F. Gribler and the late George Meyers, business agents of Local 110, building laborers' union, were charged in a third indictment with conspiracy to delay interstate commerce of three contractors.

The three construction firms were: M. H. Carpenter, Inc., builder of the Glasgow Village housing project in St. Louis County; Jones-Hattelsater Construction Co., which built a flour and storage building for the Spies Milling Co., and McCarthy-Pohl Construction Co., on a grading job at Lambert-St. Louis Field, the St. Louis municipal airport.

Gribler was shot to death Aug. 26, 1952. Meyers was murdered March 13, 1952. Neither crime has been solved (ENR Oct. 9, 1952, p. 31).

Hagen, Lee and Anderson were named jointly in a fourth indictment charging a conspiracy and attempt to obstruct interstate commerce by extortion of $18,000 from a subcontractor on construction of the John J. Cochran Veterans' Memorial Hospital in midtown St. Louis.

• Grand jury inquiry—The indictments arose out of a grand jury inquiry that opened April 15 (ENR April 23, p. 28). United States District Judge George H. Moore directed the jury to investigate exhaustively "reported terroristic activities by professional gangsters and unscrupulous officers and agents of labor organizations to extort money and property payments from employers, particularly contractors in the construction industry."

After returning the indictments, the jury heard four additional witnesses and recessed until May 26. William W. Crowdus, interim U. S. attorney, said the jury would continue its investigation at that time.

Shakedown

A story in the St. Louis Post-Dispatch of Aug. 22, 1951, said that a man representing himself as an emissary of Callanan tried to shake down the Frazier-Davis firm for $50,000.

The demand, made in the summer of 1950, was refused the newspaper said, although the man warned that "there will be trouble if you don't pay off, and the job will cost $500,000 more than your estimate."

As predicted by the un-named bribe solicitor, the Post-Dispatch said, the job ran more than $500,000 above estimates.

Engineer-scientist groups disagree on wage bargaining

Professional and union organizations of scientists and technicians agree that Congress should not alter the Taft-Hartley labor law rule which lets professional employees decide whether they wish to bargain separately from the production workers, but there is a fight going on over the right of professional groups to discuss questions concerning wages, hours and working conditions.

The National Society of Professional Engineers wants protection for its member chapters to discuss company policies and practices with management without the danger of being classified as a union and thus possibly subject to dissolution on the ground of being company dominated.

On the other hand, the Engineers & Scientists of America, made up of various unions of profesional and technical employees, wants Congress to make it an unfair practice for a company to discuss wages and other employment conditions with any organization not a bargaining agent.

Wage agreements

Some strikes settled; boosts vary 10 to 25 cents

Some 20,000 AFL construction workers went back to work last week in eastern Tennessee, following a settlement with the Associated General Contractors, which terminated a 19-day work stoppage.

The terms are the same as those granted earlier to 4,000 Oak Ridge A-plant construction workers – new scales ranging from 10 to 25 cents an hour higher.

The seven AFL crafts which joined in the walkout got virtually all they had asked for at initial negotiations which opened in early April, almost a month before the May 1 contract expiration and walkout.

Federal Conciliator Sloan Springfield of Atlanta, Ga., said the increases would average about 7%, or 1.7% greater than those granted earlier in the year to TVA craftsmen.

AGC struck sharply at TVA action, contending it would force it to meet TVA wages which, AGC charged, do not represent the prevailing wage scale in the area.

"Because of the TVA wage scales and those accepted at Oak Ridge, the Knoxville Chapter of AGC has capitulated to the demands of the building trades," Knoxville President J. E. Willard said.

The new agreement carries only wage revisions, no fringe benefits. A 25-cent hike, top rate in the new structure, went to reinforcing steelworkers. Brickmasons got 10 cents.

The new contract calls for laborers, carpenters and teamsters to be advanced to double-time for overtime work. Masons, ironworkers, operating engineers, and millwrights were getting double pay already. Concrete finishers will continue to draw time and a half.

• **Omaha strike ends**—The seven-week-old Omaha construction strike which idled an estimated 3,500 at its peak and held up construction estimated at $100 million, was ended last week.

Wage agreements with the final three of the eight unions involved permitted resumption of work. The last unions to agree were ironworkers, concrete finishers, operating engineers.

Increases ranged from 20 cents for ironworkers and 15 cents for concrete finishers to 10 to 20 cents for various types of operating engineers. Other trades had already obtained increases ranging from 12½ to 20 cents.

During the course of negotiations the AGC had withdrawn from bargaining with the last three unions and member firms of the AGC thereupon bargained individually.

Cement-finisher school is first in the country

The first recognized school in the U. S. for cement-finisher apprentices has been established in Cincinnati, Ohio.

The school is the result of efforts of a joint committee of the Associated General Contractors of America and the Cincinnati Cement Masons Union, Local 524. Also cooperating in the program are local contractors, Cincinnati Board of Education, U. S. Department of Labor and the Portland Cement Association.

The course lasts for three years with the men attending classes four hours each Saturday during the regular school year. The course consists of three major divisions:

The first two hours of each week are devoted to blueprint reading and layout work. The last two hours are used alternately, nine weeks at a time, by the contractors for practical work and demonstrations and by the Portland Cement Assn. for lectures and laboratory work on the design, control and proper handling and placing of concrete.

Through the influence of the Department of Labor's Bureau of Apprenticeship, federal funds have been made available for the school.

Right-to-work bill rejected in California

Despite strong support from employer groups, the California legislature has refused to pass a "right-to-work" bill.

Legislative observers believe that California Gov. Earl Warren's opposition to a change of laws affecting labor-management relations was a strong factor in defeat of the measure.

However, Assemblyman Harold K. Levering, author of the bill and Assembly floor leader, said he introduced the measure "at the request of workers who resent the fact that they had to join a labor union to earn their daily bread."

The bill would have banned the closed shop by making it unlawful for a worker to be required to join a union as a condition of employment.

Unusual fund

AFL plasterers and cement masons accepted a 14 cent-an-hour package increase to settle a three-week-old dispute between the union and contractors in the Detroit area.

The pact includes a novel promotional fund which will be used for research toward improvement of materials and methods, advertising to promote the industry and education on the uses and possibilities of plastering.

Contractors will pay two cents per manhour into this fund and the union will pay one cent.

Federal court injunction stops secondary boycott

In one of the first cases in Maryland in which the National Labor Relations Board invoked the secondary boycott provisions of the Taft-Hartley Act, a building-trades council and a local union last week agreed to halt picketing at two construction projects.

Chief Judge William C. Coleman signed a temporary injunction halting the picketing after the Baltimore Building and Construction Trades Council and a local of the bridge and structural ironworkers, AFL, agreed to call off the pickets.

The injunction had been sought by the NLRB on the basis of charges, filed by Stover Steel Service, that the unions had engaged in a secondary boycott for the purpose of forcing Stover, a subcontractor, to stop work on the two projects.

The projects involved are the $1.5-million building for defective delinquents at Jessup, Md., and the $2-million Claremont Housing project in Baltimore.

Stover employs union labor and was not involved in any labor dispute with the two defendent unions, it was pointed out, but his men refused to cross union picket lines.

In a stipulation agreement filed last week, the unions agreed to refrain from picketing the two projects in their efforts to force Stover to cease doing business with Henry A. Knott, Inc., general contractor on the Claremont project, or Garden Construction Co., general contractor at Jessup.

The stipulation contains the further promise that the unions will desist from any other picketing of a secondary boycott nature pending a hearing before a regional board of the charges filed by Stover.

Reports reveal upward wage trend of 10 to 15 cents an hour

Tabulations of the wage raises already granted to the construction trades in the largest 20 U. S. cities reveal a significant trend:

Although most trades either are in the process of negotiation or will not go to the bargaining table until later in the summer, the trend so far is for some wage increases. These are—on the whole—somewhat smaller than last year.

Despite the efforts of contractor groups to limit raises severely in the face of increased competition and uncertain future markets, the unions have pushed through increases hovering around a 12.5-cent-an-hour average.

This year the fringe benefit problem has been treated as part of a package deal. Many increases were negotiated at a flat sum, with the amounts to be allocated to various funds (wages, health and welfare, retirements, etc.) left up to later decision.

It should also be noted that most contracts are being negotiated later, and agreements arrived at more slowly, than during the similar period of last year. Some of this slow pace can be attributed to the fact that no government agency has put up a "signpost" on wage rises—such as the Construction Industry Stabilization Committee did last year.

Of the contracts so far negotiated, the lowest increases offered and accepted were a 5-cent increase (in welfare fund payments) by ironworkers in New Orleans, and a 5-cent increase for bricklayers in Denver.

Top increases went to other—but allied—trades such as the truckdrivers, who got 25 cents an hour more in Cleveland and 17.5 cents an hour in Detroit.

Detroit was the scene of the largest increase so far granted to one of the skilled trades where the bricklayers got an increase of 17 cents an hour which included a 5-cent fringe benefit payment.

Some large requests which have not been settled include hoisting engineers of Baltimore who have asked for 30-50 cents more an hour; and the Philadelphia carpenters who are asking for 30-35 cents an hour more.

Pattern of 1953 Construction Wage Increases

Based on reports to Engineering News-Record

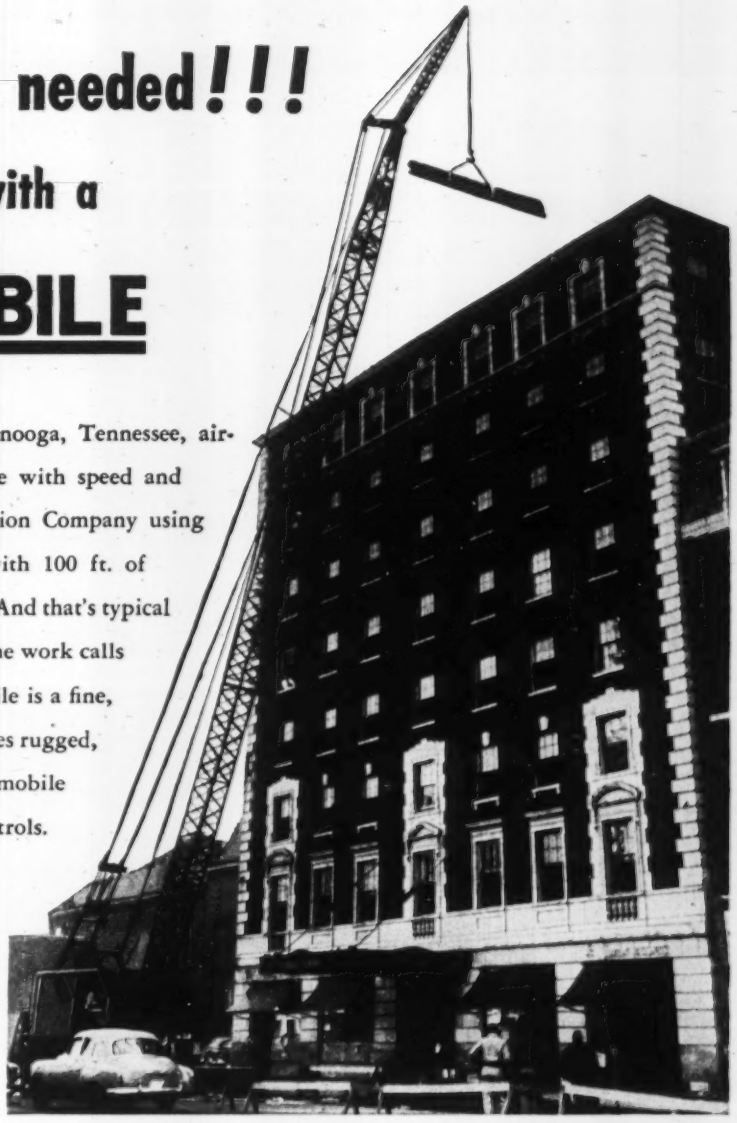
Medium type shows increases asked
Bold type shows increases granted so far this year

City	Common labor	Bricklayers	Carpenters	Structural ironworkers	Other trades	Comment
Atlanta	7¢	New rates coming up July 1, no details yet				
Baltimore	16¢	25¢ (Cement finishers, on strike)	....	On strike	Hoist. engrs.: 30–50¢ Painters: 10¢	Several trades on strike, painters only ones to so far
Birmingham	....	....	....	15¢	Hoist. engrs. } 10% Truck drivers } Steamfitters: 15¢	
Boston	Negotiating, no details available					Negotiations going slow, no major agreements settled yet
Chicago	15¢	15¢	15¢	15¢	Electricians: 15¢ Hoist. engrs.: 20¢	
Cincinnati	Negotiating, no details available					Contracts expired 5/31
Cleveland	12.5¢	7.5¢ (For welfare fund; asking addit. incr.)	12.5¢	12.5¢	Hoist. engrs.: 12.5¢ Truck drivers: 25¢ Other trades: 5¢	
Dallas	7.5¢	....	....	12.5¢		
Denver	....	5¢	....	....	Steamfitters: 15¢	Most unions still negotiating
Detroit	Negotiating	17¢ (Incl 5c H&WF)	17¢ (Incl. 5¢ ins.)	Negotiating	Truck drivers: 17.5¢ (Incl. 5¢ H&WF)	Most unions still negotiating
Kansas City	On strike	Asking pension fund	12.5¢	12.5¢	Hoist engrs. } On Truck drivers } strike	
Los Angeles	11¢*	Negotiating	13¢*	15.5¢*	Hoist. engrs.: 12¢* Truck drivers: 11–12¢* Tractor; shovel; crane operators: 13–14¢*	All rates effective 6/15
Minneapolis	13¢	7.5¢	15¢	10¢	Other trades negotiating	
Montreal	No negotiations so far for higher wages					Most contracts being renewed for '53–'54
New Orleans	7.5¢	....	....	5¢	Plasterers: 7.5¢	
New York	No negotiations started yet					Contracts expire 6/30/53 or later
Philadelphia	Negotiating, asking 25¢ including fringes					Several trades out on strike. Settlement expected to be 10.15¢ increase
Pittsburgh	Negotiating, no details available					Increases expected to be less than in '52.
St. Louis	10.5¢	Contract runs to 12/31/53	17.5¢	25¢		
San Francisco	15¢	15¢	15¢	Negotiations	Truck drivers: 15¢ Tractor, shovel, crane operators: 25.5¢	
Seattle	Only wage increase expected is 10¢ per hour for health and welfare funds					

No SKY HOOKS needed!!!

—all lifts are easier with a

CRANEMOBILE



High atop the Read House in Chattanooga, Tennessee, air-conditioning equipment is set in place with speed and precision by the Industrial Steel Erection Company using a BAY CITY CraneMobile equipped with 100 ft. of boom and a 15 ft. jib to handle the job. And that's typical of CraneMobile performance whether the work calls for high lifts or heavy lifts. CraneMobile is a fine, powerful, efficient machine that combines rugged, heavy duty construction with flexible, mobile service and accurate boom and load controls. Both crane and carrier are built as a unit to give a nicely balanced crane with a low center of gravity. CraneMobile is available in capacities up to 25 tons with carriers to suit your job requirements.

219

Check these BAY CITY CraneMobile features:

- Collapsible high gantry makes it possible to raise maximum recommended boom lengths from the horizontal without assistance.
- Accurate, fast independent boom hoist raises or lowers boom or boom and load only under power.
- Power load lowering device which can be quickly engaged or disengaged, will lower heavy loads smoothly and accurately.

For complete information about many other CraneMobile features, see your BAY CITY dealer today.

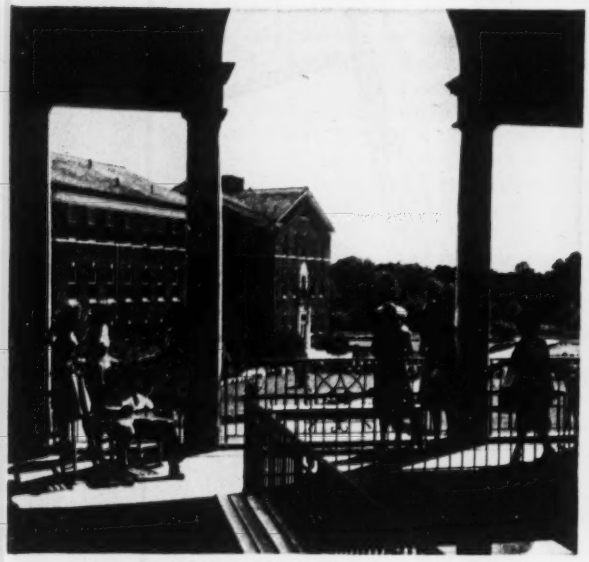
BAY CITY SHOVELS, INC., BAY CITY, MICHIGAN

Handy pocket-sized book of facts and features tells you all the reasons why "all lifts are easier with a CraneMobile". It's packed with interesting information, it's nicely illustrated and it's yours for the asking. Just write us.

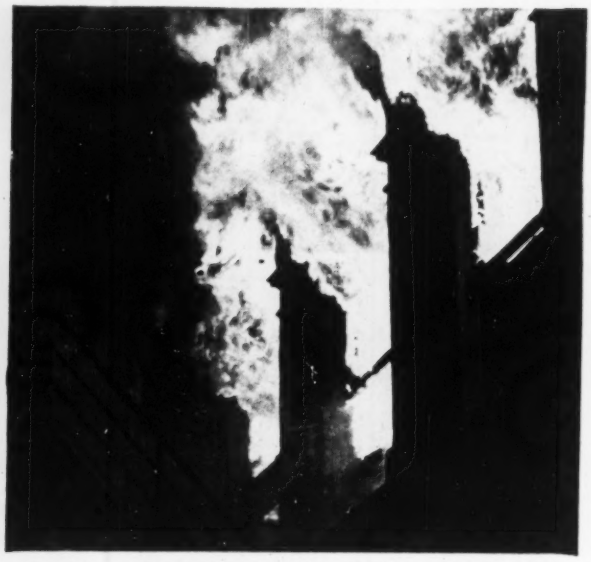
BAY CITY

SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS

The SPEEDIEST, most RELIABLE detector for automatic fire alarm systems is DETECT-A-FIRE®

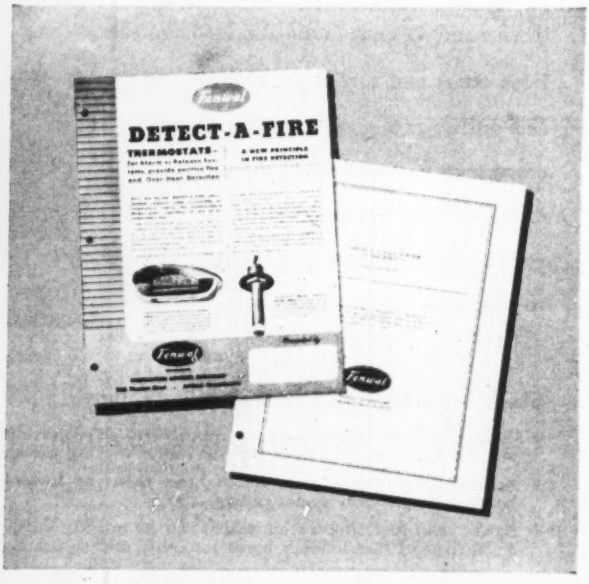


1. IN MODERN COLLEGE PLANNING IT IS WISE to take the fullest possible precautions against fire — not merely to save valuable buildings and university records but basically to protect the lives of students and faculty. DETECT-A-FIRE thermostats are recommended as the speediest, most reliable detectors for automatic fire alarm systems.



2. THIS TRAGIC CLASSROOM FIRE could have been avoided had an adequate fire protection system been in operation. DETECT-A-FIRE units actuate the alarm the *instant* surrounding air temperature reaches a danger level. Due to an entirely new principle of operation, this unique thermostat completely protects against alarm delay and false alarms.

3. THE STAINLESS STEEL SHELL ITSELF is the sensitive, actuating element. Hermetically sealed and corrosion resistant, DETECT-A-FIRE thermostats more than pay for themselves in dependable, long-lived, trouble-free performance. With this intrinsic economy and dependability it is more than worthwhile for you to specify them. They are installed by all the leading manufacturers of alarm and release systems. Listed by Ⓤ . . . approved by ◈.



4. THE FREE BULLETINS above contain complete details on Fenwal DETECT-A-FIRE thermostats — the only units bringing you the benefits of Rate-Compensation Actuation, a new principle of fire detection. Fenwal engineers will gladly work with your system installer so that you will enjoy the advantages of *full* fire protection and *long term* economy. Write **Fenwal Incorporated, 266 Pleasant Street, Ashland, Mass.**

Fenwal

DETECT-A-FIRE®

Thermostats

DYNAMIC, RATE-COMPENSATION ACTUATED FIRE DETECTORS

Auto research center buildings are showcase for glass, brick, lighting

Built for research to house designing and modeling of new vehicles, an air-conditioned, $11.5-million structure is the fourth building to be completed in the Ford Motor Company's $80-million Research and Engineering Center at Dearborn, Mich.

Begun in 1947 and scheduled for completion in 1958, the new center occupies a 250-acre site adjoining Ford's original 500-acre Engineering Center. Units completed since 1947 on the new site include: A $10-million dynamometer building for testing engines and transmissions; maintenance building; vehicle-testing building; an oval and straightway track for road testing; and two large cooling ponds with a combined capacity of 8,000,000 gal of water for air-conditioning and supplementary fire control.

In general, all the buildings on the new site harmonize in exterior appearance. As in the new styling building, exteriors are limestone, brick, aluminum and glass. Interiors include metal-lined walls, acoustic ceilings and movable metal partitions.

• **Daylighting**—Lighting in the new building is a principal feature of the design. The exterior of the T-shaped structure has large areas of glass on every side to supplement with daylight the artificial lighting inside. At the head of the T, in the two-story design and office wing, are 72 aluminum frame center-pivot windows (each 5x8 ft) paneled into the 308-ft long concave face of the wing.

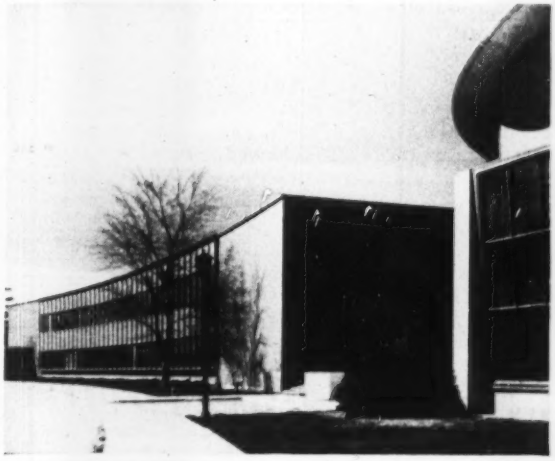
Perpendicular to the design wing is the 396-ft long studio and drafting wing with double-glazed windows, 18 ft high, along each side. On the north side of this studio section is a display garden, with direct access to the studios, for the daylight viewing of vehicle models. Full-scale modeling studios run along this side of this wing to take advantage of the north light.

On one end of the design wing is a 120-ft dia display rotunda. The rotunda has a 19x80-ft casement window in one wall facing the display garden that adjoins the studio wing. A steel framed dome, 42 ft high at the center, covers this section of the building.

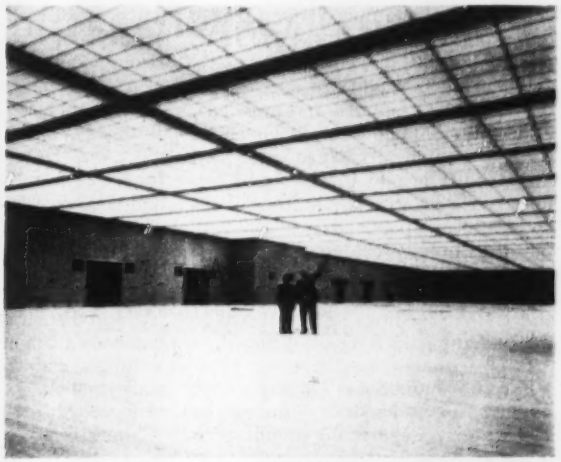
• **Artificial illumination**—Interior lighting in the rotunda is concealed behind a projecting structural ring 20 ft above the floor. This light reflects against the dome and is controlled with a dimmer from zero to 200 ft-c. to get full illumination on three turn-tables installed in the floor for displaying cars.

The studio wing is lighted with an installation that delivers from 115 to 200 ft-c at 30 in. above the floor. This is accomplished by alternate mercury vapor and incandescent lamps behind egg-crate louvers. The light is directed through glass prisms to insure even lighting on the modeling work, and a number of spotlights are set in the ceiling to highlight the models.

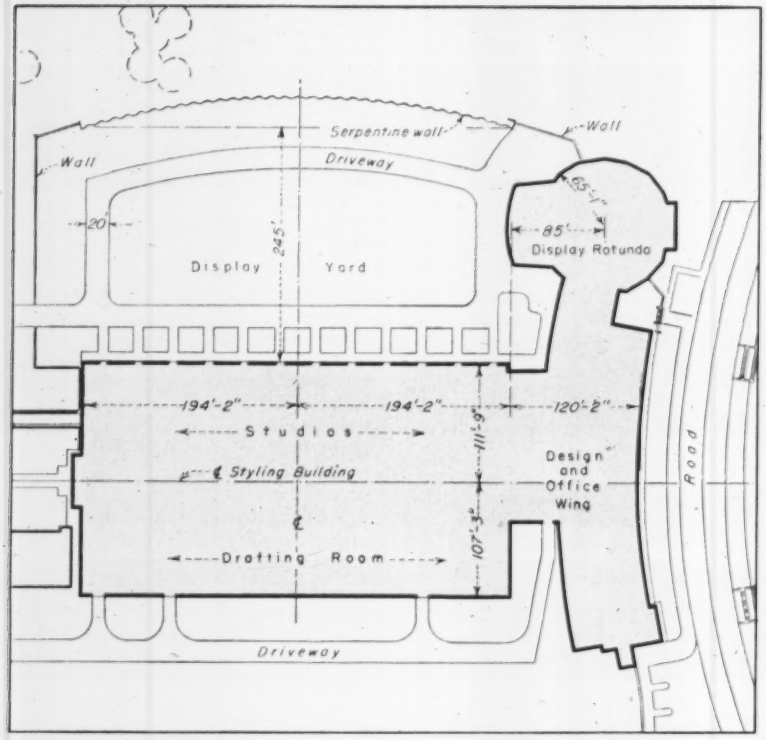
• **Studios**—There are twelve 100x32-ft full-scale modeling studios on the north side of this wing. They are separated by mechanically operated folding walls that can be pushed back to give a clear view throughout the length of



CONCAVE FRONT of new styling building uses 8-ft high aluminum windows paneled into its 308-ft face. Offices and drafting area occupy its two floors.



STUDIO WING in styling building has paneled egg-crate louvers in ceiling for strong, no-glare light from incandescent and mercury vapor lamps above louvers.



PLAN of new styling building at Ford Research Center, Dearborn, Mich.

the wing. Large glass doors big enough to move full scale models through them, open out on the display garden. This section has especially controlled heating and air conditioning to maintain the proper atmospheric balance for clay and plastic modeling work.

• **Dynamometers** – Another important structure in the new Research Center is the $10-million dynamometer building, completed last year. Built in the shape of a cross, measuring 450x430 ft, its four wings extend out from the center core of the main laboratory. It has a total floor area of 284,000 sq ft, and contains 40 test cells.

There are 32 cradle-type dynamometers for testing engines, transmissions, axles and complete cars. In operation these dynamometers are so controlled that they return to the electrical system 95% of the power they use—enough to illuminate a city of 100,000.

Ventilation provides for 70 air changes per hour in test cells, each cell individually controlled, with heating and cooling facilities. The balance of the building is fully air-conditioned.

• **Future buildings** – Three future buildings are under study. One will be a new body engineering building to house all body drafting and body shop activities used in the manufacture of prototype bodies. The second one will be a new research building which will house all automotive research activities. The third one will be a new propulsion test building for high speed and high temperature studies.

An industrial relations building will be started this year. It will house plant security headquarters, a fire department, master telephone switchboards, hospital and employment offices.

• **Designers and builders**–Voorhees, Walker, Foley & Smith, New York City, in combination with the Ford engineering staff, are the architects and engineers on the new research and engineering center. Darin and Armstrong Construction Co. Inc., Detroit, were general contractors for the Dynamometer and Maintenance Buildings, and the Bryant and Detwiler Co., Detroit, general contractors for the Styling Building, cooling ponds and site services.

Installation of special equipment and apparatus in connection with engineering and research is being done by the Ford Motor Company's Building and Facilities Department of the company's Engineering Staff.

Ford's engineers in charge of the project include: E. S. MacPherson, vice-president, engineering; J. A. MacAlarney, director of plant engineering; V. Y. Tallberg, executive engineer, administration; and C. L. Bouchard, manager of the building and facilities department.

Disaster relief plans

U. S. Public Health Service is assuming an active role

A recent survey abroad, mainly in the wake of Holland's recent flood disaster, indicates activity of the National Research Council's "committee on disaster studies." And the fact that the engineer-scientist team engaged in the study has drawn on the U. S. Public Health Service for membership indicates the vital role such work has assumed within PHS.

Disaster relief planning for natural calamities has become in recent years an increasingly important function of the Public Health Service. And while the expressed emphasis is on natural occurrences, the work also includes planning for civil defense emergencies, in collaboration with the Federal Civil Defense Administration. It has its "man-made disaster" angles.

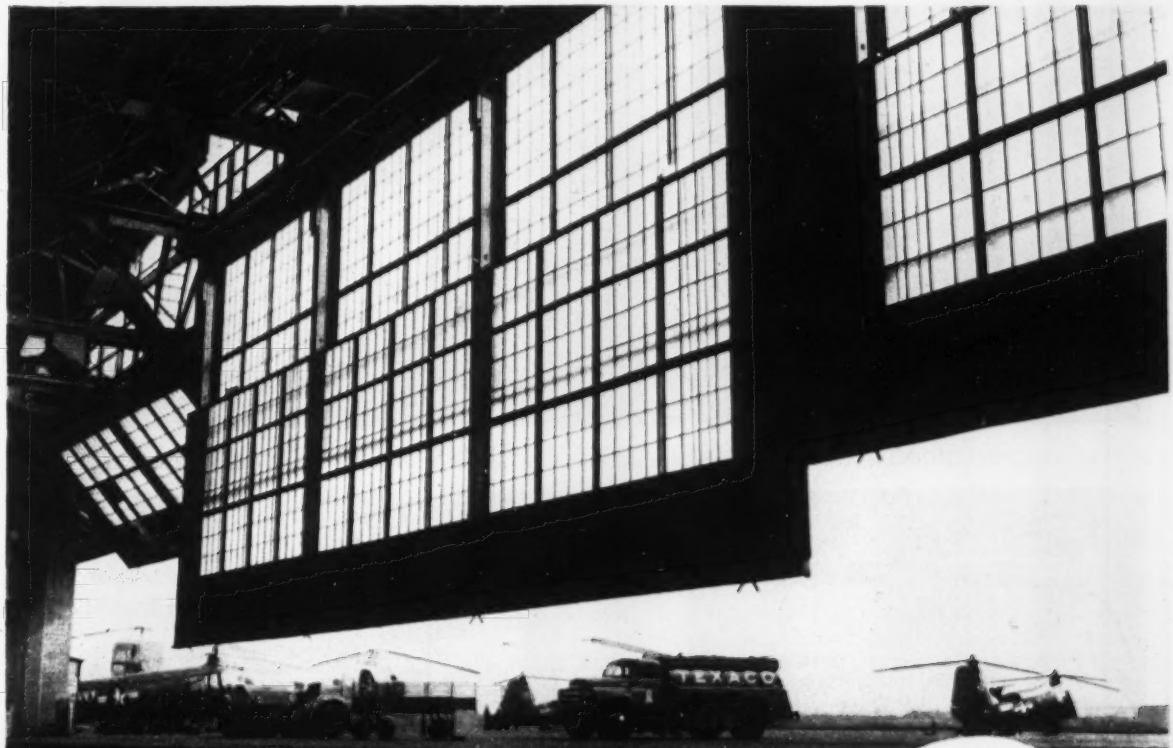
Chief concern of the Public Health Service is how best to assist state health departments in aiding a community whose water or sanitation services, break down.

Means of maintaining safe and adequate water supply, sewage disposal and refuse collection and disposal through fire, flood or other disaster are being studied. Protection of food and milk from contamination, provision of adequate shelter, and control of disease-carrying insects and rodents are other problems.

PHS plans and policies on these matters are being worked out mainly by Harvey F. Ludwig, sanitary engineer director of the Office of Health Emergency Planning, Office of the Surgeon General. The chief of the office, which concerns itself with emergency medical measures as well as sanitary engineering, is G. E. McCallum. Mr. McCallum is a career officer of the Public Health Service and was chief engineer for the Office of Civilian Defense during World War II. Mr. Ludwig recently went to PHS in a consulting capacity.

Both served as consultants to "Project East River," a recent study of the national potential for withstanding wartime disasters; this was conducted by Associated Universities under contract from the Department of Defense, FCDA and the National Security Resources Board.

A recent example of emergency assistance was during the 1951 Kansas-Missouri flood. Some 70 PHS professional specialists were in the area at the flood's peak, assisting in restoration of services, and aiding in rehabilitation. No abnormal incidence of any communicable disease was reported for any community in the area.



Truscon Vertical-Lift Canopy Hangar Doors-

High, Wide and Handsome

AT PHILADELPHIA INTERNATIONAL AIRPORT

They built quality into Philadelphia International Airport, using Truscon Steel Vertical-Lift Canopy Hangar Doors, Industrial Doors, Architectural Projected Windows and Ferrobord Roofdeck. Design by Public Works Department, Philadelphia, Pennsylvania. Philip McDowell, Chief Architectural Designer. Alex Maltman, Chief Structural Engineer. Hughes-Foulkrod Company, Contractors.

TRUSCON STEEL DIVISION
REPUBLIC STEEL CORPORATION
1064 ALBERT STREET • YOUNGSTOWN 1, OHIO

They're rolling the big ships in and out *fast* at Philadelphia International Airport these days. One reason is the quick, smooth-flowing action of Truscon Vertical-Lift Canopy Hangar Doors.

This outstanding door was developed especially for hangars in which door openings are high and extremely wide. Look at the advantages: Stoppage at any stage of opening . . . Heat conservation through rapid closure . . . All operating mechanism concealed on the *inside* of the hangar . . . No encroachment on storage space inside, nor apron space outside the building.

Truscon builds Vertical-Lift Canopy Doors in extreme heights and widths, in as many individually-operated sections as desired. No posts of any kind are required between sections.

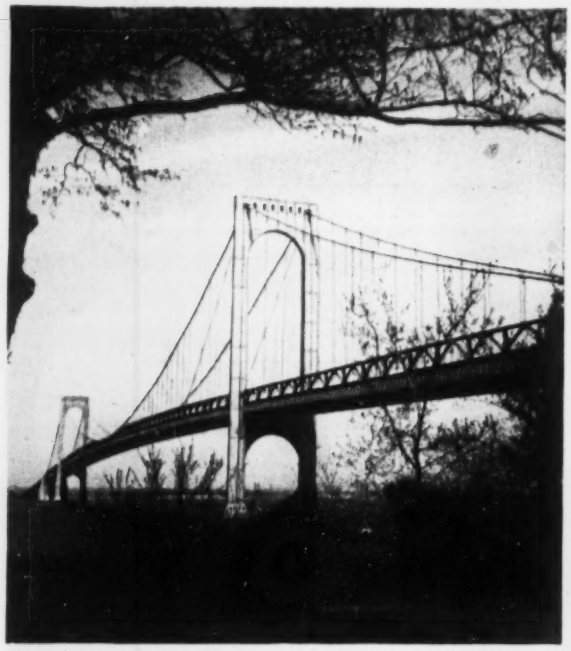
Other Truscon Hangar Doors include Straight Slide, Braced Canopy, Unbraced Canopy and Vertical Lift Types. And, Truscon Door Engineers always are ready to work with you. When it comes to doors, come to Truscon.

TRUSCON
MARK OF MERIT PRODUCTS

TRUSCON a name you can **build** on

ENR photos by Compton

A NEW NEIGHBORHOOD is developing around a vast sanitary landfill operation which in time will create 225 acres of park.



BRIDGE (Bronx-Whitestone) put the neighborhood on the map.

LANDFILL is bringing the area up out of the marsh.

NEW HOMES are coming along with the mass housing.

AND STORES are sure to follow.

SEWAGE TREATMENT at Hunts Points meanwhile is cleaning up the East River.

NEW HOUSING on what was wasteland at the fringe of the city is . . .

MOVING PEOPLE out of slum areas.

Construction breeds construction as urban development gets rolling

Throggs Neck Houses—$16-million low-rent apartment development in New York City's Borough of the Bronx—is now being occupied by some 4,500 persons who come from slums or substandard housing.

As structures, the elements of this project feature nothing radically different from prior work of the New York City Housing Authority. But as houses, they are a significant part of a large-scale, long-range urban land development project.

Hailed locally as the heart of an intelligent neighborhood development program, the sizable federally-aided housing job is only a link in a whole series of widely varied construction operations. Construction breeds construction as coordinated activities of all city departments aim at development of revenue-producing property out of urban wasteland.

Throggs Neck juts into Long Island Sound where it narrows down into the East River, just east of the Bronx-Whitestone Bridge, which could be said to have put the sparsely populated promontory on the map, making it a more accessible part of the city.

Naturally, the bridge was not built for the purpose of opening up Bronx real estate, but unquestionably it had that beneficial indirect effect, with its parkway approach and the subsequent express and feeder routes that have developed and are still being developed (i.e., the Cross-Bronx Expressway).

The Bronx end of the heavily trafficked Bronx-Whitestone suspension span is anchored on the marshy west side of Throggs Neck, alongside Westchester Creek. Most of the approach roadway is on fill, and an extensive area of fill completed with the bridge has since been opened up as a park, west of the bridge. This is the beginning of Ferry Point Park.

Most of Ferry Point Park will be north and east of the bridge, where sanitary landfill operations under way are developing a planned 225 acres.

For three years now the city's Department of Sanitation has been hauling in 2,000,000 cu yd (bulk) of refuse annually and compacting it into about 40% of that volume as fill. At this rate there is another three years' operation of the sanitary landfill ahead, with completion due in 1955. Then development of the new land into park will await completion of Park Department projects of higher priority before blossoming into a bathing and boating area in about 1958.

• **Water clean up**—As scores of garbage trucks day after day, and month after month unload their material, building up usable acreage from the marsh, an independent, and yet a related construction project has been started and finished further down the East River's shore: Hunts Point Sewage Treatment Plant.

Nobody bathes in the East River at Ferry Point just now. But with completion of the $22-million, 120-mgd Hunts Point sewage works a big step was taken towards readying the waters for the day when they are beach-lined at Ferry Point.

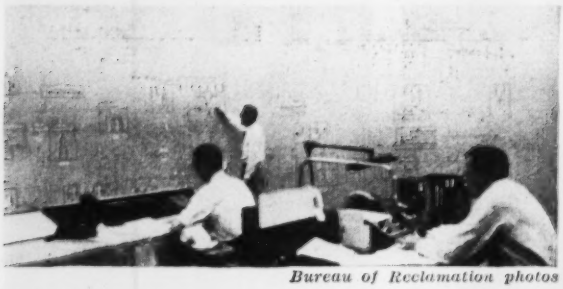
• **Housing**—Heart of this community abuilding is, of course, the housing project. The Throggs Neck development, fronting on future Ferry Point Park, consists of 29 three- and seven-story buildings on 42 acres. Only six 2-family houses had to be razed to make room for its 1,185 dwelling units that average 4.6 rooms each.

All 29 reinforced concrete structures rest on timber piles in land brought up to legal grade with borrowed fill. None of the buildings is on sanitary landfill; New York City learned its lesson on that score when it put postwar emergency housing on garbage in Queens (ENR May 15, 1947, Vol. p. 801). But buildings cover only 13% of the site, and some sanitary landfill does extend into the landscaped area.

Statistics on this low-rent housing (Title III under the Housing Act of 1949) put cost at $2,087 per room, $13,605 per dwelling unit. Besides dwelling units the development boasts seven recreation rooms, three children's playrooms and a child health center.

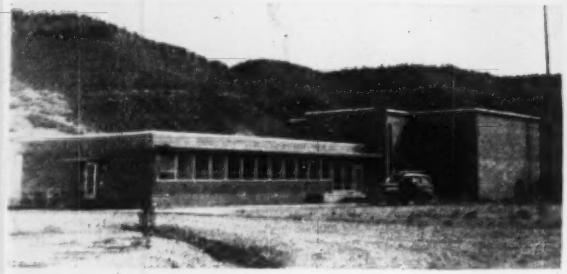
Throggs Neck Houses will have a lasting effect as stimulus to further construction in the area. Streets will be built where they have existed in name only. Utilities must be provided, and enlarged. Private house construction already has started in surrounding streets. Low-lying vacant lots will be brought up to grade and developed. Shopping expansion was assumed and is starting. P. S. 101 is in the plans to meet school-room needs.

And so it will go, as a community within a city develops out of: a major traffic improvement; landfill operations, continuing until all the city's needed incinerator capacity is built; a pollution abatement effort; public housing; and the ancillary service structures it requires. It's a beneficial chain reaction in construction.



Bureau of Reclamation photos

Complicated control board in . . .



simple headquarters building sends . . .

water from behind Olympus Dam in Colorado and . . .

New nerve center in foothills of Rockies . . .

Water for a million farm acres and power for 130 wholesale customers reach out into three states through canals and transmission lines controlled from an unimpressive looking dispatching station tucked away in the hills some 50 miles northwest of Denver, Colo. From this new control station flow the orders for delivery of water and power from Colorado-Big Thompson and the Upper Platte System into Colorado, Wyoming and Nebraska.

Flow of water through turbines at six power plants and flow of electricity through substations over 2,500 miles of high voltage lines are involved. Sixteen major reservoirs operated through the new control station hold a total of 3,286,000 acre-ft of water; eleven power plants have installed capacity of 288,300 kw.

Flatiron Dispatching Headquarters (at Flatiron Mountain near Loveland, Colo.) is at the east end of the $164-million Colorado-Big Thompson project of the U. S. Bureau of Reclamation (ENR Aug. 2, 1951, p 27). This project brings upper Colorado River water to the South Platte Basin (and the so-called North Platte System) through the Continental Divide. It flows in 13.1-mi Alva B. Adams Tunnel at rates to 550 cfs, after being lifted 186 ft at Granby Pumping station on the Rockies' west slope. Colorado-Big Thompson has 1,000,000 acre-ft and 178,700 kw to be dispatched from Flatiron.

In Wyoming, the Upper Platte System of the USBR stores another 2,286,000 acre-ft of water and has 109,600 kw of capacity for distribution to be controlled at Flatiron.

Dispatch headquarters is a simple T-shape building with administrative offices in its stem and a control room in the two-story cross of the T. The control room is dominated by a semicircular, 10-ft high control board (see photo). On the board is diagrammed the entire power system, all power plants, substations, significant switching points and interconnections with other systems. There are instruments to record all operating conditions and data needed by the dispatchers who staff the station around the clock.

• **Water dispatch**—While dispatch of power—done by telephone and radiotelephone from the Flatiron headquarters—is perhaps the more dramatic part of the operation, the dispatch of water is the over-riding consideration in all functions.

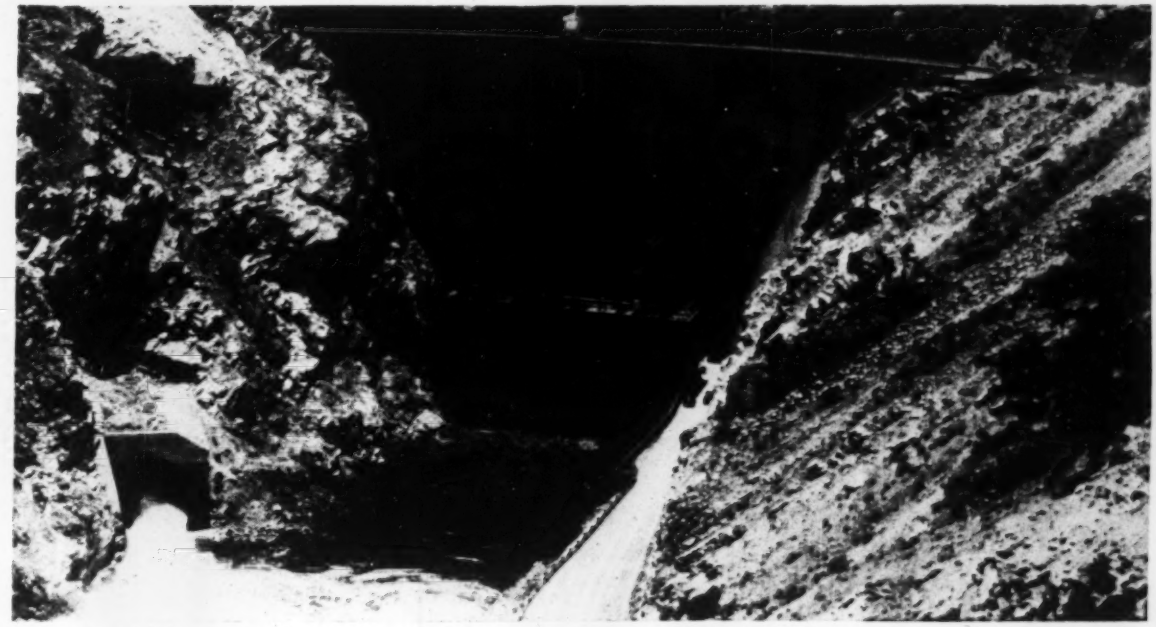
Control of water on the Colorado-Big Thompson phase of the system must first of all be in accordance with the Colorado River Compact.

It must also be guided by hydrologic predictions. Bureau engineers, the Soil Conservation Service, the Weather Bureau and other agencies keep a steady stream of data on snow pack, rainfall, subsoil moisture and climatic conditions going into the Flatiron Dispatch Building. There the data are assembled and analyzed by engineers under the supervision of Victor Koelzer, chief of river operations for the Upper Platte System. Koelzer and R. P. Marean, chief power dispatcher, work under the overall supervision of H. R. Brown, dispatching superintendent.

The Upper Platte System is directly responsible to the Bureau of Reclamation regional headquarters in Denver. Basic data correlated at Flatiron, are sent for statistical analyses to an electronic computing machine in the bureau's Denver offices.

• **Operating procedure** — Current reports and stream flow records dating back to 1901, and even older Weather Bureau records, are used by Mr. Koelzer and his associates in drawing up an annual operating plan. The present operating schedule was drafted in October, 1952. With that as a basis, Koelzer and the other hydrologists began Feb. 1, 1953, making monthly forecasts of the amount of water likely to be in storage in the reservoirs of the Upper Platte System this summer.

They estimate (1) reasonable maximum water supply which might be expected; (2) a reasonable minimum and (3) the most probable supply. Three



power from Wyoming's Seminoe plant into tri-state area of the West

dispatches power and water from remote dams

forecasts are made each month, based on the estimated maximum, minimum and mean inflows to the reservoirs.

"We are able to make only a stab at what our inflows are going to be," Koelzer says. However, his engineers' estimates are exceptionally accurate. As an example, they predicted last fall a storage level of 130,000 acre-ft by April 1 in Horsetooth Reservoir, one of the major units—actual storage on that date was 126,000 acre-ft.

• **According to compact** — The Colorado River Compact specifies that no Colorado River can be wasted or "dumped" into a river after it is diverted to the eastern slope. All water must be utilized through irrigation and power generation within Colorado.

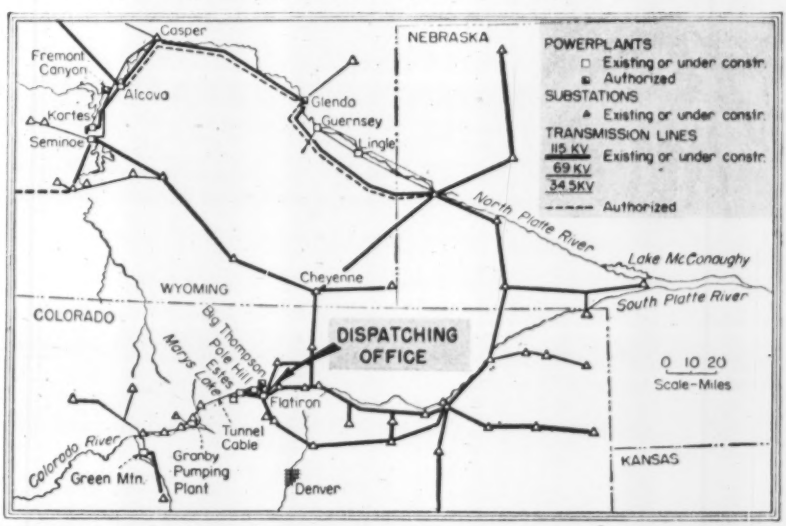
"We have to be able to store the water when we bring it across the divide," Koelzer explains. "We import through the winter only the amount we figure is necessary to meet the spring and summer irrigation demands. If, after April 1, the irrigation picture changes we have to sell the water on an acre-ft basis to the farmers. While justification of the project is power revenues, there is a moral commitment for the Colorado farmers to buy the water for supplemental irrigation."

Water controls are not as stringent on the North Platte River Basin in Wyoming and Nebraska, but in all three states, water utilization is governed by Supreme Court decrees, compacts, individual water rights, federal reclamation laws and contracts between irrigation districts and the U. S. Government.

Water on the North Platte can be spilled from the reservoirs without use only if it can not be "reasonably stored."

• **It takes planning**—While power dispatching is on a day-to-day and sometimes minute-by-minute basis, water dispatching takes long range planning.

"Our aim is to meet the critical point, rather than a month-by-month figure," Koelzer says. He explains this involves anticipating the likely irrigation demands so that there will be enough water in the reservoirs to meet those needs, at the same time keeping water at a sufficient level to maintain power system operations.



UPPER PLATTE SYSTEM has its dispatching office at Flatiron. Water as well as power in three states is controlled from this office.

"Get cleaner threads, tighter joints with Buckeye Conduit!"

AN ELECTRICIAN TALKS ABOUT CONDUIT: "I agree with other electricians that "Buckeye" gives a clean and strong thread. A clean thread is essential for making a really tight, safe joint! Youngstown rigid steel conduit is tops."

ELECTRICAL ENGINEER ENDORSES BUCKEYE CONDUIT: "As an electrical engineer, I have jobs which demand wiring which must withstand vibrations and shock. By specifying "Buckeye" I protect these wires because only good steel produces threads strong enough to make tight and safe joints."

Youngstown makes rigid electrical conduit from start to finish. This enables Youngstown to control the complete manufacturing process which insures that each length of "Buckeye" is made of topgrade steel. Since only high quality steel produces a clean, strong thread, it's no wonder that "Buckeye" is a favorite in the industry. On your next job, be sure to specify Youngstown Buckeye conduit.

Shipments of Buckeye rigid steel conduit are now being made from our conduit mills at Indiana Harbor and Youngstown.

QUALITY · YOUNGSTOWN · SERVICE

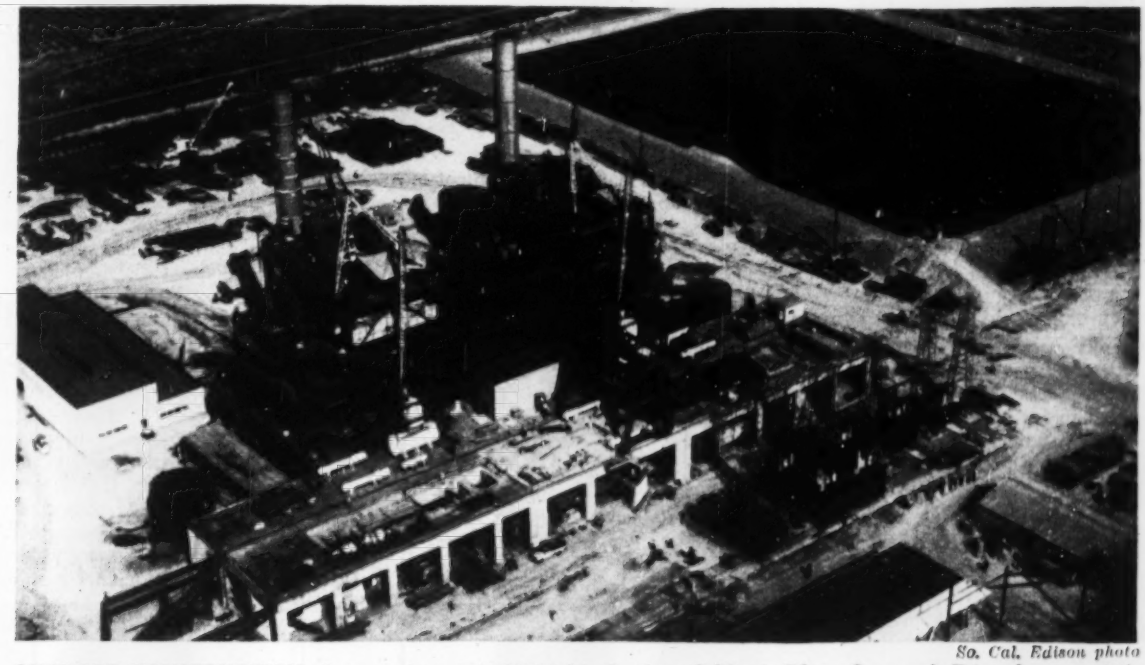
THE YOUNGSTOWN SHEET AND TUBE COMPANY

General Offices — Youngstown 1, Ohio

Manufacturers of Carbon, Alloy and Yoloy Steel

Export Office - 500 Fifth Avenue, New York

COLD FINISHED CARBON AND ALLOY BARS · ELECTROLYTIC TIN PLATE · COKE TIN PLATE · WIRE · PIPE AND TUBULAR PRODUCTS · CONDUIT · RODS · SHEETS · PLATES · BARS · RAILROAD TRACK SPIKES



So. Cal. Edison photo

OUTDOOR CONSTRUCTION of steam plants is highlighted in Southern California Edison Company's Etiwanda steam station where substantial savings result from this type of design. Reservoir (upper right) is essential part of plant with water supply scarce in arid southern California.

Open-air steam plants are cooler and cheaper

Two recent California steam power plants give good evidence that outdoor units are cheaper than walled-in plants. Southern California Edison Co. officials estimate that a saving of $5 to $8 per installed kilowatt has been achieved in their new Etiwanda steam station through use of outdoor construction and other economies. Pacific Gas and Electric Co. engineers expect similar economies on their Pittsburg, Calif., steam plant.

First of two 125,000-kw (maximum guarantee) units at Etiwanda was scheduled to be on the line in April but has been delayed by an electrical workers' strike. This plant is located near Fontana, Calif., site of Kaiser Steel.

PG&E's Pittsburg steam plant is well along in the construction stage, with the steel supporting structure nearing completion. It includes four 150,000-kw units.

Cost of the Etiwanda plant is $35 million, or $140 per installed kilowatt. Pittsburg, on the other hand, is estimated at $75 million, or $125 per installed kilowatt. Probable reasons for the differential in unit construction costs are: (1) Pittsburg has more and bigger units and this naturally reduces the fixed portion of unit costs. (2) Etiwanda has a more difficult and more costly cooling water problem.

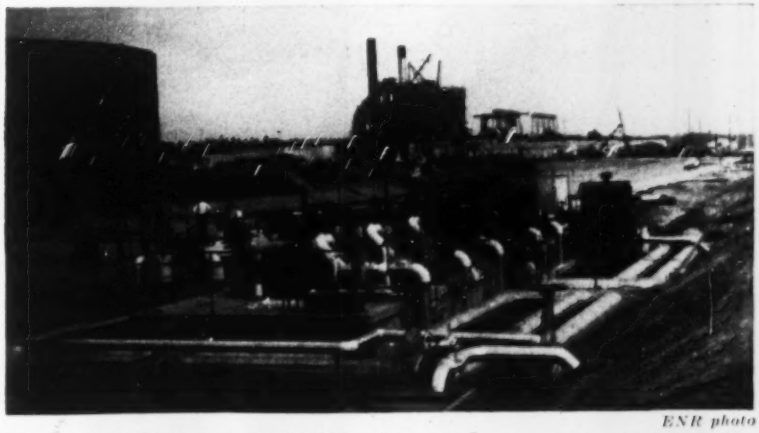
• **Outdoor construction**—Outdoor construction involves putting boilers, turbines and generators outdoors with no housing. It is not particularly new, but is as extensive at Etiwanda as at any plant yet built. Pittsburg will have slightly more protection—an asbestos-cement canopy around the top portion of the boiler structure and more auxiliary units located in sheltered areas below the operating level.

Weather is comparatively mild at the two California locations, but outdoor plants have been built and operated successfully in Montana and Minnesota, where the winter is severe.

Completely outdoor plants have not been built along the seacoast because of the additional maintenance that would be developed by salt spray. Both SoCal Edison and PG&E have coastal steam plants that are enclosed.

At Etiwanda, only the control room and the administration building are completely enclosed. A small portion of the space under the turbine-generator platform includes exterior partitioning to protect air compressors and the main exciters.

Obviously, outdoor construction can do no more than reduce costs slightly



ENR photo

FUEL OIL PUMPING EQUIPMENT at Etiwanda shows complete extent of outdoor construction there.

since the boilers must be supported in any case by a substantial steel framework and the turbine-generator assemblies must rest on an elevated platform—usually of reinforced concrete.

But, besides saving the cost of the enclosure, outdoor construction eliminates troublesome and sometimes costly ventilation problems. At Etiwanda, an estimated $75,000 of turbine-room ventilation equipment was eliminated.

Outdoor construction also permits simpler structural supports—and in earthquake areas this is an important factor. Both Etiwanda and Pittsburg steam plants are designed for a 20% seismic load. This conservative factor is considered necessary in important utility installations.

With outdoor construction, the frame can be erected with diagonal members for lateral force resistance. The size of these members is little changed by an increase of seismic factor from, say, 10% to 20%. These diagonals are compression members and the slenderness ratio is most likely to be a governing factor in design. Diagonal members might not be usable in enclosed structures. Resulting seismic design would require use of heavy—and more expensive—beam-and-column moment connections. Enclosed buildings would require a heavier frame to carry the enclosure, adding to the earthquake design cost.

These are all savings in capital costs. Operating costs are reduced, too. For example, cleaning is simplified. Boiler casings, piping, decks, walkways and exposed equipment simply can be hosed down. And the various units are more accessible for repairs.

Erection of an outdoor plant is simpler because access to any feature is much easier. At Etiwanda, stiffleg derricks were placed on top of the boiler structures for installation and erection work. These derricks, rotating through 270-deg arcs, were supplemented by Chicago booms for the remaining 90 deg. And motor cranes could reach most other main items. Thus, installation of boilers and other equipment was decidedly simplified as compared with working indoors.

Both SoCal Edison and PG&E realized substantial savings by designing the gantry crane that serves the turbine-generator area for the second greatest lift. Previous practice has been to erect the gantry and use it to install all the turbine and generator equipment. But the 200-ton generator stators need be placed only once. They almost never have to be removed or replaced. So, by jacking them into place, the cranes can be designed for a 60-ton lift, representing a significant saving.

• Etiwanda economies—There are several other design features at Etiwanda resulting in economies. For example, design of the administration building made use of tilt-up construction, with the floor slab poured on the ground. And the concrete was left unplastered and unpainted.

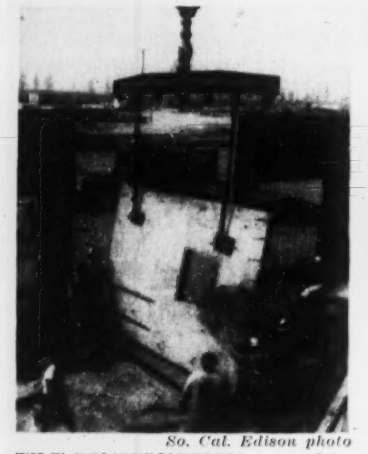
Foundation costs were low, too. The allowable bearing pressure of 3,500 psf meant that no piles were needed to support the structure. The ground was so good that no forms were needed for footings, even those as much as 10 ft deep.

This favorable soil condition was used to advantage in supporting the cooling towers—one of the largest induced-draft cooling-tower installations in the world. A large capital saving was realized by omitting the usual under-tower reservoir. The towers are built on a simple concrete slab that has a slight pitch to it, so cooled water flows into a flume running along one side. The slab can be cleaned easily of debris—leaves, silt, and bugs—by hosing into the flume. This conduit is simply a ditch with a gunite lining but it provides some auxiliary storage.

At Etiwanda, a substantial quantity of the circulating water piping is steel pipe placed with no lining. This large diameter (48 to 96-in.) piping was lined after installation with cement mortar.

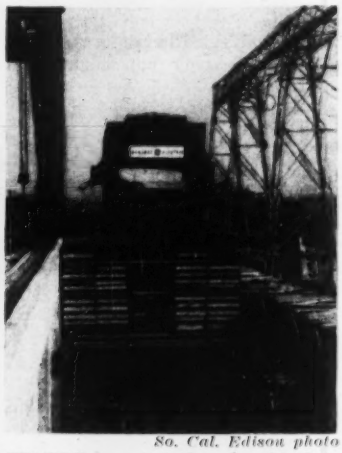
An interesting construction economy was achieved at Etiwanda by pooling all heavy equipment. The contractor, Stone & Webster Engineering Corp. did about 55% of the work as measured from a man-hour standpoint. The remaining 45% was performed by some 30 major subcon-

Here are some cost-saving tricks . . .



So. Cal. Edison photo

TILT-CONSTRUCTION was used for administration building.

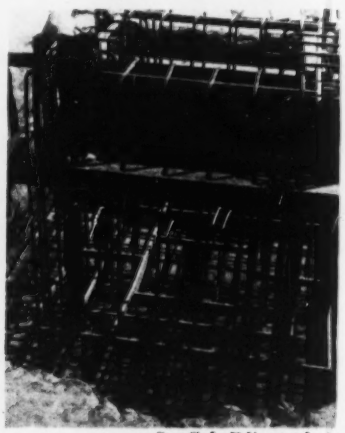


So. Cal. Edison photo

STATOR was jacked and cribbed in place reducing required crane size.

ENR photo

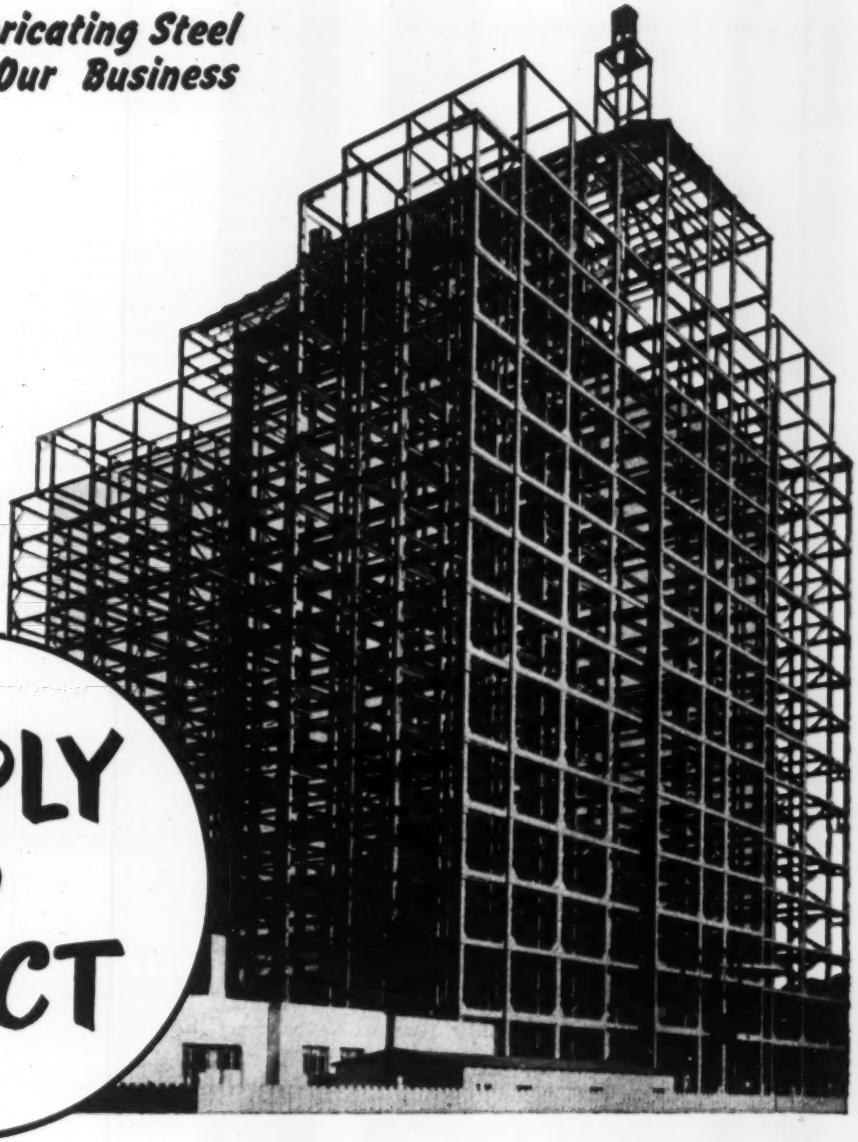
GUNITED FLUME carries return flow from cooling towers.



So. Cal. Edison photo

FOOTINGS needed no forms because of the satisfactory nature of the soil.

Fabricating Steel is Our Business



SUPPLY AND ERECT

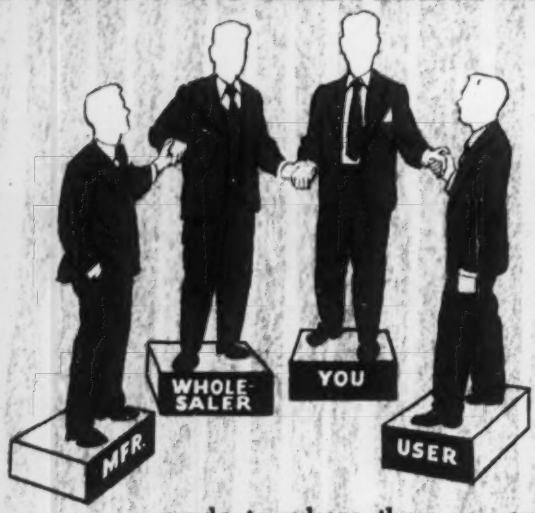
THE construction of any kind of building, big or little, can be accelerated and the cost reduced to a minimum when you let Ingalls fabricate and erect the steel. In this way, you concentrate the steel responsibility in one source. And, whether it's a multiple story building, power station or plant expansion, Ingalls' experience assures you of a job well done.

THE INGALLS IRON WORKS COMPANY

BIRMINGHAM, ALABAMA

Sales Offices: New York, Chicago, Pittsburgh, Houston. Plants: Birmingham, Ala., Decatur, Ala. Verona, Pa., North Birmingham, Ala., Pascagoula, Miss.,

THE WHOLESALER AND *YOUR* FUTURE



You and your wholesaler have a common interest; you two are the important links in the distribution chain that connects the producer with the user.

Much depends upon your combined operations, for each of you has an important function in maintaining the flow of manufactured goods from where they are made to where they are eventually used.

You are handicapped if you cannot supply your customers with the products they desire; your wholesaler is likewise handicapped if he is unable to satisfy your requirements. Neither can function efficiently without the support of the other. The advantage of one reflects in a benefit to the other.

Applying the phrase, "a chain is no stronger than its weakest link," you can realize that you can progress in proportion to the cooperation you and your wholesaler give each other.

Your success is interwoven in the pattern of the wholesaler. The help you gain from the wholesaler is reflected in the services you render your customers in satisfying their many needs.

Give your customers the best service you can provide and the best products you can find and you can be sure of a very successful career. Let us remind you that a tube that will give your customers lasting satisfaction is Wolverine copper tube. Buy it by name — Wolverine.

WOLVERINE TUBE DIVISION of Calumet & Hecla, Inc., *Manufacturers of tubing*, 1465 Central Avenue, Detroit 9, Mich. Plants in Detroit, Mich. and Decatur, Ala.

tractors. All had need at one time or another for cranes, A-frames and other heavy equipment. Operating such equipment on a pool basis minimized idle time.

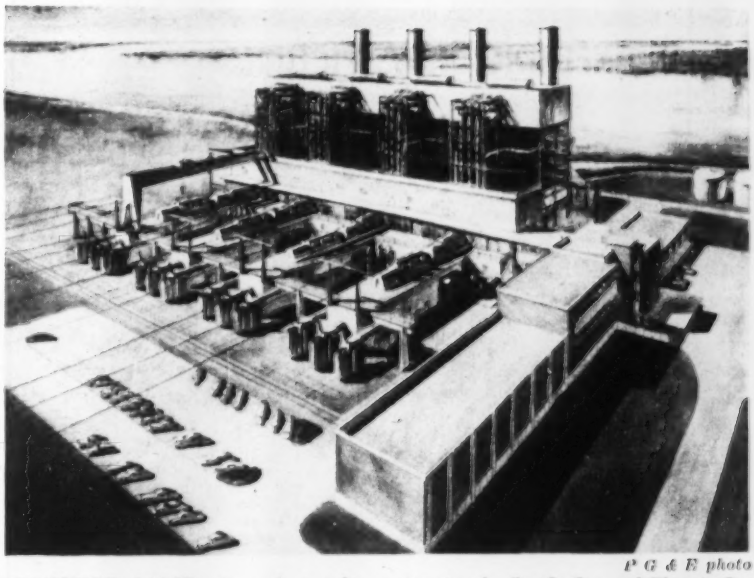
Stone & Webster also had available scaffolding for subcontractor use and compressed air was furnished from a central source.

• **Fuel supply**—Gas and oil for operating the plants are much more easily provided at Pittsburg than at Etiwanda. Pittsburg being on tidal water —although some distance from the sea —is designed to receive fuel oil by ocean-going tankers. Each ship carries some 115,000 bbl and each of the four boilers uses 6,000 bbl a day. So all that was needed was a dock and storage.

Pittsburg will operate partly on natural gas in the summer months when consumer demand for gas is lower. And even though PG&E also sells gas, this gas is obtained on an if-as-and-when available basis. Rates that the PG&E gas division must charge the electric division are set by rate-regulating agencies.

Location of Etiwanda prevents tanker supply of fuel oil. The site was dictated by many factors other than fuel supply—water, available land, demand for electricity, to name a few. And rail tank car delivery of oil at Etiwanda is impracticable. The 10,000-bbl per day demand would require 45 carloads a day. That would mean a substantial investment in rolling stock plus a high freight cost.

Accordingly, SoCal Edison built a 40-mile long, 8¾-in. dia pipe line for oil supply. It is operated for the company by the General Petroleum Corp. It also built a 12-mile long gas pipeline that connects with a Texas-California line. And supplementary coke-oven gas will also come from the nearby Kaiser Steel plant. Recent construction of a new blast furnace and coking facilities has made a substantial amount of coke-oven gas available, but only enough to take care of about 20% of the Etiwanda initial fuel needs.



P G & E photo

PITTSBURG, CALIF., steam plant under construction by Pacific Gas and Electric Co. will include 150,000-kw units. Both this and the Etiwanda plant are designed for a 20% seismic load.

• **Credits**—Pittsburg Steam Plant is being designed and constructed by Bechtel Corp. under the direction of Pacific Gas & Electric Co. Walter Dreyer is vice-president and chief engineer of PG&E, and C. C. Whelchel is chief of the division of steam engineering.

Etiwanda Steam Station is being designed and built for Southern California Edison Co. by Stone & Webster Engineering Corp. W. L. Chadwick is vice-president in charge of engineering and construction for SoCal Edison, and T. M. Hotchkiss is chief mechanical engineer.

Steam plant water is vital

Water supply is an important consideration in steam plant construction. Etiwanda, for example, uses 6,000 acre-ft of cooling water makeup a year and makes extensive use of cooling towers to do so.

Location of PG&E's Pittsburg plant was dictated in part by water supply considerations. A tidal arm is only 400 ft away and it provides unlimited cooling water. Because untreated river water would cause harmful deposits on boiler tubes, boiler makeup water is obtained by distilling river water, supplemented as required by water purchased from the city of Pittsburg.

In southern California, water is a much more difficult problem. There being no streams that run the year round, a coastal location provides the only easy water source. But SoCal Edison has two coastal steam plants and is building another, so it built the Etiwanda plant inland to spread out generating facilities and to be near new industrial areas.

Boiler makeup water was not too hard to get there: Three 850-ft deep wells provide the water for steam making and domestic use as well as an emergency cooling-water supply, and relatively little treatment is required.

Normal cooling water comes from the Colorado River Aqueduct of the Metropolitan Water District of Southern California. A main feeder line from the aqueduct passes right through the Etiwanda site; so it's a simple matter to provide a connection. A 40-acre-ft gunited open reservoir provides floating storage and some standby.

Colorado River water has 700 ppm of disolved solids. During circulation over the cooling towers, this is concentrated to 3,000 ppm before quality is considered too poor for further use. But this concentration is too great for discharge directly to the ground. Substantial discharge of such water over a period of years would render groundwater unfit for many uses.

Result was that a 16-mile, 21 to 24-in. precast concrete pipeline had to be built. This line carries the concentrated waste to other disposal and outfall lines that take it out to sea. SoCal Edison has purchased capacity in the outfall.

There are further complicating factors. The boilers and air heaters are periodically cleaned by washing. Sulfur deposits resulting from fuel-oil combustion make the wash water highly acid—so much so that the waste wash water can not be discharged even into the outfall without dilution. This has resulted in construction of a 4-acre-ft retention reservoir. Wash water is retained in the reservoir and gradually added to the plant waste water.

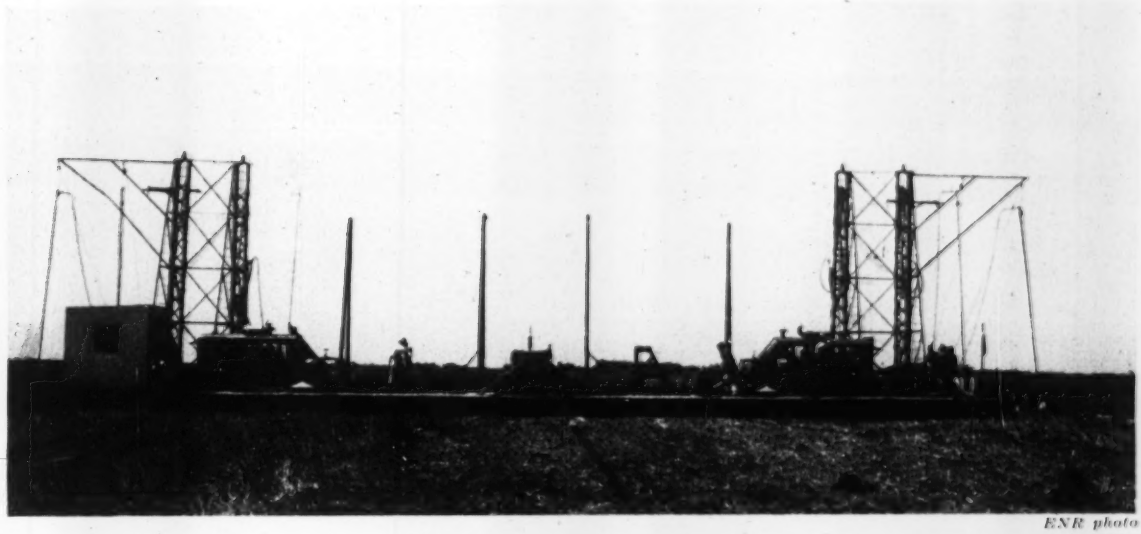
These waste water disposal procedures were worked out by SoCal Edison engineers in consultation with officials of the regional water pollution control board and of Los Angeles County sanitation districts.

Photo by de Lay

AT McNARY DAM—Engineers closed the powerhouse intake gates at 2:35 pm on April 23. Twenty-four hours later the first water (left) splashed over the spillways, and a late spring runoff ended the storage draw-down generation season in the Pacific Northwest. McNary pool surged to a 310-ft level at 5:45 am the following morning—hours ahead of schedule. Beginning July 31, the Corps of Engineers plans to push the pool level to 340 ft.

U. S. Army photo

GETTING INTO THE ACT—A Bailey bridge was erected by officer candidate students at Fort Belvoir, Va., recently to acquaint visiting engineering officers from 14 Allied nations with equipment and technique of the U. S. Army Corps of Engineers. But when it came time for the launching demonstration, the bridge refused to budge for the students. From the sidelines, the visiting "brass" volunteered to assist. With varying degrees of help from the colonels and generals (right) the bridge slid across the gulley.



ENR photo

AMPHIBIOUS DRILL BARGE—Where this barge (above) now rides, there soon will be a 16-mi canal 90 ft wide and 16 ft deep. Designed partly to provide borrow material for an adjacent levee, the canal is a part of the U. S. Army Corps of Engineers Everglades flood control project in southern Florida (ENR Oct. 2, 1952, p. 34). Coral rock underlies 9 ft of muck that won't support ordinary construction equipment. To get at the rock Gahagan Const. Corp. of New York designed this barge to ride muck or water, mounting vertical drifter carriages as outriggers. Winch line to deadman moves barge. Blasted rock is dug later, for levee building.

AND THERE WAS LIGHT—Drivers on U. S. Highway 99 through Portland, Ore., one of the heaviest traveled sections of the city, faced this unlit 2-mi maze of approach lanes to the Willamette River steel bridge (right). But with the installation of 86 lighting units—a problem for Portland engineers because of the multi-level construction of the bridge—accidents were cut to a minimum while traffic flow was greatly increased. Basic mounting of the lights is 30 ft above the roadway with spacing between 75 and 190 ft. For the lowest level of the bridge, a deep trough, a floodlight is hidden to throw light from behind the driver in the direction of the traffic.

NEW*

OMEGA
MODEL 50
VOLUMETRIC
FLUORIDIZER

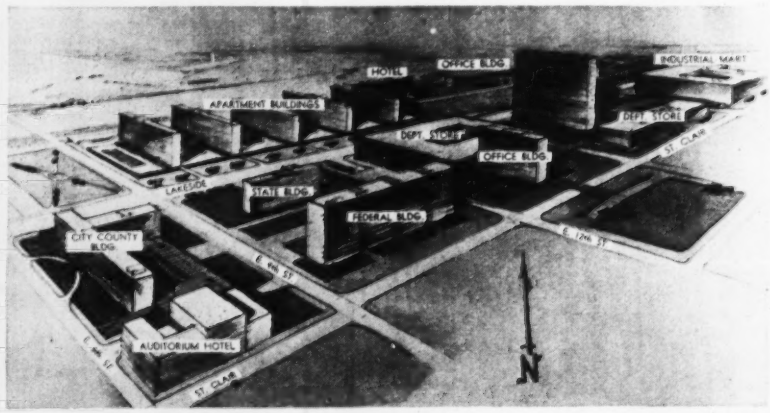
This new feeder answers the fluoridation needs of the small water works. Low cost, greater accuracy, economical to operate—everything about Omega Model 50 Fluoridizer is designed to set a new standard in the feeding of dry chemicals at low rates. Write Omega Machine Co., Providence 1, Rhode Island.

* NEW! Greater accuracy
* NEW! Streamlined housing
* NEW! Compact design
* NEW! Low filling height
* NEW! Dustless loading

OMEGA
DIVISION OF B.I.P INDUSTRIES
390 Harris Avenue
Providence 1, Rhode Island

Please send new Bulletin 50-K3 describing Model 50 Fluoridizer.

Name.....
Company.....
Street.....
City.....State.....



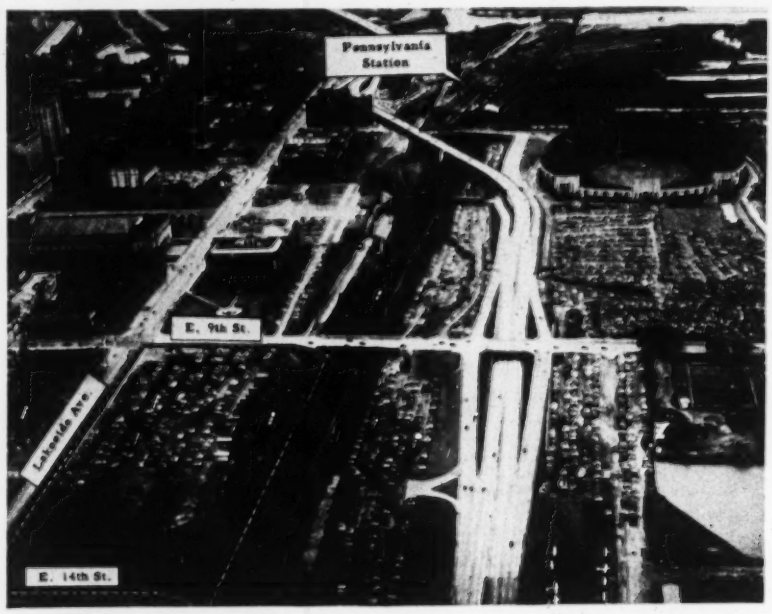
PROPOSED PROJECT would feature a variety of buildings on a 60-acre site. The Pennsylvania R.R. land would form the nucleus of the tract with the remainder to be acquired through additional purchases. Investment capital seems assured.

Cleveland project gets boost

Pennsylvania's RR's decision to sell downtown plot may pave way for $200-million development

The Pennsylvania Railroad threw a bombshell into Cleveland realty and civic circles late last month when it revealed plans to sell an 11-acre plot in the heart of the city's downtown area.

First results were an announcement by Richard Hawley Cutting & Associates, Cleveland architects and engineers, of their plan to develop the area with a $200-million project featuring apartment, office, hotel and department store buildings, and an indication by city officials that the city might be interested in picking up the property for future redevelopment.



DOWNTOWN CLEVELAND is the area proposed for the multi-million dollar project. The Pennsylvania Railroad will sell the 11-acre site enclosed in the dashed lines (lower left). Lake Front station (upper center) would be abandoned and its site also sold.

Remember the trade marks "tt" and "TUBE-TURN" are applicable only to products of TUBE TURNS, INC.

Engineered for tough service

THIS TUBE-TURN Welding Neck Flange will contain greater pressures under temperature extremes, and will last longer than other types under repeated bending or vibrations of piping. It is *engineered* for tough service . . . with a long, tapered hub, and a smooth transition in thickness to the pipe-end bevel.

You can select the exact Welding Flanges you require from TUBE TURN's complete line: welding neck; slip-on; lap joint; socket welding; blind; orifice; or pipeline non-standard flanges. It *pays to specify* TUBE-TURN Welding Fittings and Flanges. Call your nearby TUBE TURNS' Distributor . . . you'll find one in every principal city.

Be sure you see the double "tt"

TUBE TURNS, INC. LOUISVILLE 1, KENTUCKY

DISTRICT OFFICES: New York • Philadelphia • Pittsburgh • Chicago • Houston • Tulsa • San Francisco • Los Angeles • Denver • Atlanta

Subsidiaries: TUBE TURNS OF CANADA LIMITED, CHATHAM, ONTARIO • PENNSYLVANIA FORGE CORPORATION, PHILADELPHIA, PA.

ENGINEERING SERVICE

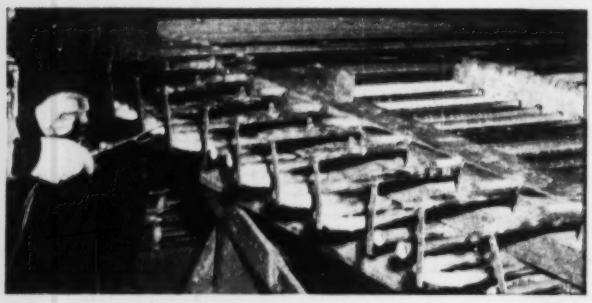
TUBE TURNS' *Engineering Service*
HELPS DEVELOP NEW PIPING TECHNIQUE

D. R. Cheyney, of TUBE TURNS' Engineering Service Division, has had wide experience in alloy and non-ferrous applications.

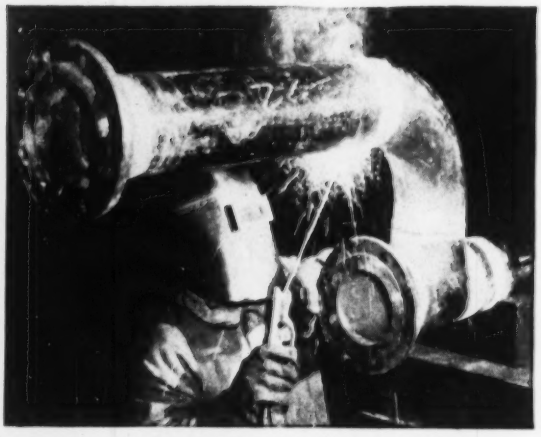
THIS STORY of how a large processor saved $50,000 and conserved scarce copper with a new approach to a piping application shows why TUBE TURNS, INC. is so highly regarded as an authority on piping engineering.

The problem involved the retubing of seven cooling units, formerly fabricated from copper tubing and fittings. Aluminum was considered as a replacement; however, there were no satisfactory methods for welding thin-walled aluminum tubing to welding fittings. TUBE TURNS' Engineering Service Division, working with Alcoa, came up with the solution. A new brazing technique was developed, and special TUBE-TURN Welding Returns, and TUBE-TURN Welding Elbows were supplied.

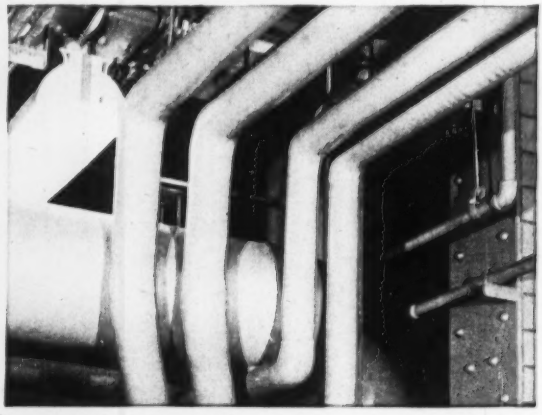
TUBE TURNS' Engineering Service is ready to help *you* in such special applications.



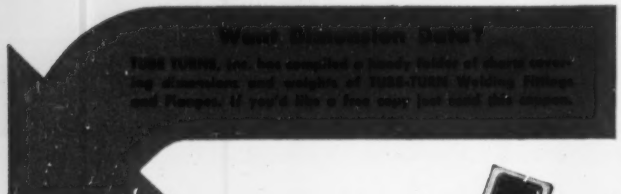
TUBE-TURN aluminum long-radius Welding Returns being brazed to aluminum tubing, in fabrication of cooling coils.



SPEEDS FABRICATION—TUBE-TURN Welding Fittings have won a reputation for dimensional accuracy that pays off in fast, easy alignment and fabrication. Time often is saved by welding assemblies in the shop, quickly tying them into the job.



SPACE SAVER—Welded piping makes a compact, neat installation—and requires no maintenance. Streamlined, its insulation is more easily applied.



TUBE TURNS, INC., Dept. E-6
224 East Broadway, Louisville 1, Kentucky

Your name .....
Position .....
Company .....
Nature of Business .....
Address .....
City ..... *State* .....

DISTRICT OFFICES

New York	Houston
Philadelphia	Tulsa
Pittsburgh	San Francisco
Chicago	Los Angeles
Atlanta	Denver

"tt" and "TUBE-TURN" Reg. U. S. Pat. Off.

TUBE TURNS, INC.
LOUISVILLE 1, KENTUCKY

The railroad said also that it has petitioned the Ohio Utilities Commission for permission to abandon its antiquated Lake Front station located only 2 blocks from the for-sale parcel. If permission is granted—and chances are that it will be—the railroad will also sell the station property, a 6-acre plot.

• **Cutting group plan first**—Although D. K. Chase, assistant to the railroad's regional vice-president, indicated that virtually all the city's real-estate firms were interested in the 11-acre plot (located at E. 9th St. and Lakeside Ave.), the Cutting group is the first to come up with a definite proposal.

The proposed plan calls for:

- Five 22-story apartment buildings with 2,500 dwelling units
- A 750-room hotel
- Two department stores
- Three office buildings
- An industrial mart occupying a block to be similar to Chicago's Merchandise Mart, and
- Several buildings to house federal, state, city, county and trade union offices.

Two floors of underground parking beneath the buildings would accommodate 25,000 cars. Freight sidings for New York Central and Pennsylvania R. R. trains would service a 3-story warehouse underneath the apartment and hotel buildings.

Construction would continue over a five-year period.

• **Only land lacking**—The 11-acre site would only be a starter for Cutting's plan. Total acreage required would be about 60 acres. The rest of the land would have to be acquired through separate purchases.

Cutting summed up his position thus: "Our plans are far enough advanced so that we could proceed without much delay as soon as the land is available. We have assurance that investment capital will be forthcoming for construction. There is no question that the project can go through if the land is obtained."

Chances of the group acquiring the railroad's land in one piece seemed good. Spokesman Chase for the Pennsylvania R. R. said: "We don't want to sell it piecemeal. We would rather that it would be taken in a single parcel so that something fine can be made of it to the credit of the city."

However, competition for the land was indicated in a statement by the city's Safety Director Birkett L. Williams who said it would be a "great

MM WHEELERS
• Equipped for your job • easy to handle • high speed • large capacity • high engine torque at low rpm • durable single unit construction • low in cost • nearby parts and service
POWER! That's what you get with this MM loader unit—big-capacity lifting plus real power down-crowding performance.

MINNEAPOLIS-MOLINE MM MODERN MACHINERY

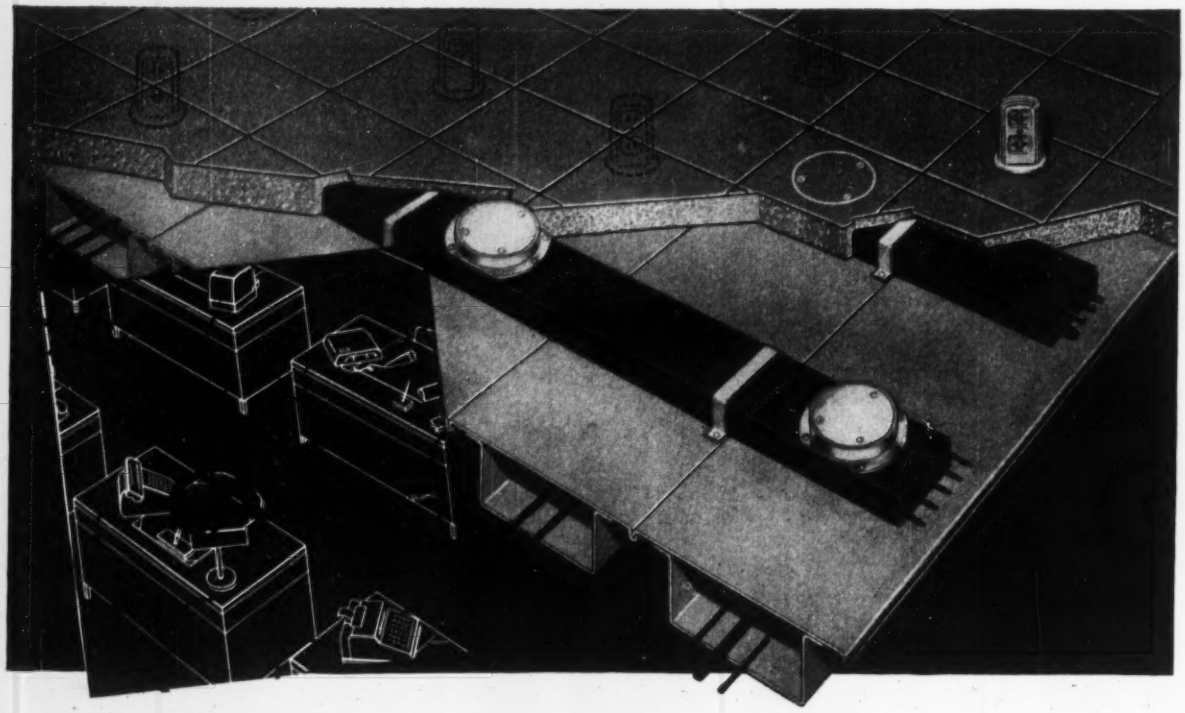
WHEELERS

COST LESS TO OWN . . . LESS TO OPERATE . . . and, they're HEAVY DUTY . . . ALL THE WAY!

You get ALL the benefits of Modern Manufacture when you specify MM Wheelers. Standardized, heavy duty parts and modern assembly procedures cost you less to begin with. Quality control in parts and assembly offers maximum precision for longer service on the job. And, those same efficient production methods permit special MM design features that give *better* loading performance—*greater* loading capacity.

Every day, more and more careful buyers are getting the facts from MM distributors . . . *buying* MM Wheelers for lower *first* cost—lower *operating* costs.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA



NEW WAY TO ENERGIZE YOUR FLOORS

FOR 1001 ELECTRICAL NEEDS

You save building time, labor, materials and money —and get *flexible permanence*—with Fenestra-Nepco Electrifloor. And your building will never be electrically obsolete.

What is Electrifloor?

It's structural unit, electrical system and subfloor all in one. Long-span, load-rated, lightweight Fenestra cellular steel panels are quickly locked together by a small crew to form a tremendously strong subfloor. Electrical header duct is then mounted on top of the panels and wires fed through the panel cells, which form smooth, clean, closed raceways. These raceways are 3″ x 10″—big enough to handle power, light and telephone cables, or extra wires if they are ever needed.

What does it do?

Lightweigh., load-rated Electrifloor saves structural steel by cutting the dead weight of your entire building. Foundations can also be less massive. The building goes up fast and is ready for occupancy months sooner. As the frame goes up the floors go in and form flat working platforms. No scaffolds, no *delays*. And because of Electrifloor's design your building will resist winds, earthquakes and bomb shock . . . the welded-together panels form a girder-type structure.

Your building will *never* be electrically obsolete . . . you can have electric outlets anywhere on the floor . . . any time. You can change outlets without disrupting your business . . . move electrical equipment from one room to another, from one floor to another, without expensive electrical alterations. You can move partitions—change your whole office layout. All you do to add an outlet is drill down and pull wires up.

Electrifloor has been fully tested and approved by Underwriters' Laboratories, Inc.

Who developed it?

Fenestra*—long a leading manufacturer of metal building panels, and National Electric Products Company (Nepco), long a leading manufacturer of electrical wiring systems are co-operating to give you Electrifloor.

Engineers of both concerns are ready to work with your architects, engineers and contractors.

Write us today for facts on the City-County Building in Detroit, a new Electrifloor installation, and for your free book on Fenestra-Nepco Electrifloor, Detroit Steel Products Company, Dept. ER-6, 2286 East Grand Blvd., Detroit 11, Michigan. *Trademark

Electrifloor a *Fenestra* Nepco product

mistake" if the city didn't buy the property for future redevelopment.

• **Railroad changes plans**—The railroad decided to sell the 11-acre parcel—which it acquired in 1951 for a new passenger station—when it became evident that the line's Euclid Ave. station was the popular choice of passengers.

Instead of building a new station, the Pennsy will put $100,000 into improvements for the existing Euclid Ave. terminal.

Washington state airs plans for two bridge projects

Two parts of the three-point program (ENR, April 23, p 54) to improve highway conditions in the Puget Sound area are again up for consideration:

• The Washington State Toll Bridge Authority announced plans to hold a public hearing on proposed location for a second bridge across Lake Washington east of Seattle, and

• The State Highway Commission applied to the U. S. Corps of Engineers for permission to build a bridge across the Duwamish River south of Seattle for the proposed Tacoma-Seattle freeway.

The one point left out is the bridging of Puget Sound and the Hood Canal, to the west of Seattle.

The Lake Washington hearings will be held some time after June 10, the date on which funds appropriated by the state legislature for this purpose become available.

This project is expected to run about $16.5 million.

The Duwamish bridge, although not as large a project, is significant in that the application for it pinpoints for the first time part of the $200-million freeway route.

Fight brews over sale of federal land in Tenn.

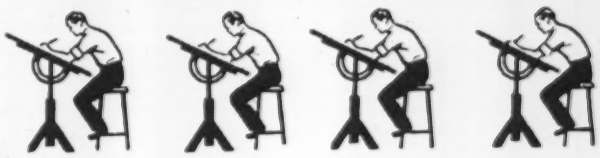
Nashville, Tenn., is buzzing over the proposed sale of a former Air Force classification center in the town. It seems there is considerable difference of opinion over the future of the land—some want it for industrial development and others for residential building.

Here's the way the fight developed:

• **Federal land offered**—The Public Housing Administration is taking bids on the 186-acre tract, to be opened in PHA's Atlanta office on June 8.

(*Continued on page 57*)

This Office Typist is doing the work of 4 Draftsmen...



This girl (who doesn't have and doesn't need, an engineering degree) is daily saving her firm the lettering time of 4 draftsmen. And she's doing a neater, sharper, more legible job of lettering, too!

EASY AS ABC to operate! Standard keyboard works like a typewriter. Wide selection of instantly changeable type faces makes Vari-Typer useful and MONEY-SAVING for other jobs.. setting text type for specification sheets, literature, instruction manuals, etc... which can be duplicated on office machines or offset printing.

Vari-Typer Lettering Machine

Body copy produced on DSJ Model.
Headlines photo-composed on the Headliner.

SEND THIS COUPON

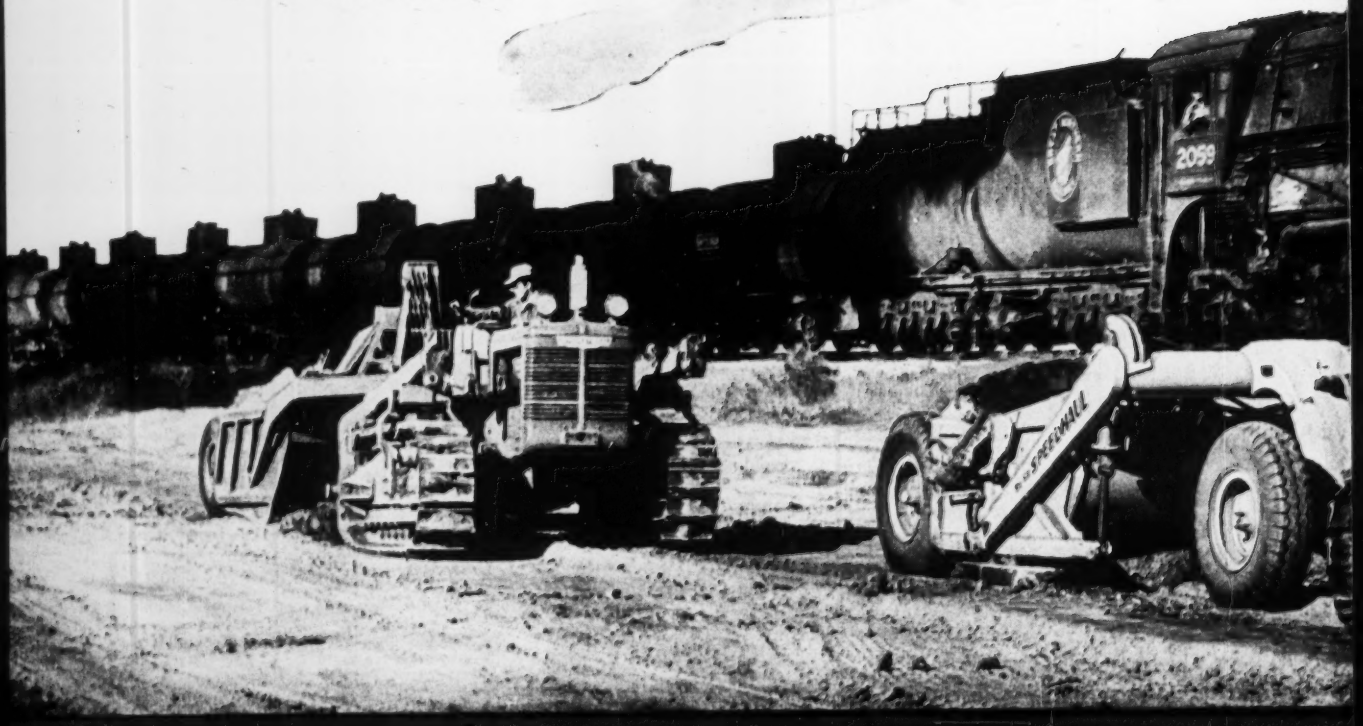
...and learn how you too can break that drafting room bottleneck.

RALPH C. COXHEAD CORPORATION
720 Frelinghuysen Ave., Newark 5, N.J.
Please send me Vari-Typer Booklet 166
NAME .....
COMPANY .....
ADDRESS .....
CITY..... ZONE... STATE.....

Hustles with

Railside commercial site prepared fast by pair of International TD-14As

"THEY'RE POWERFUL AND FAST," owner Harold J. Anderson tells reporter in describing the performance of his two TD-14As.



the Pay Load

"My TD-14As self-load six pay yards and deliver it faster than any crawlers the same size on the market."

That's the flat statement of contractor Harold J. Anderson, out on the job where his tractors are filling and leveling a building site at Minot, N. D.

Whatever size of crawler fits your needs, there's an International model that'll come through with power, maneuverability, and good steady work, day in and day out.

Here's what Anderson says on this point:

"I've been using Internationals for four years with very low maintenance and operating costs. In fact, my first International ran three full years with no downtime for repairs."

This kind of report comes from contractors all over the country—proof that International builds real dirt-moving machines that stand the gaff.

So see the International Industrial Distributor located near you. He has the full line of International crawlers—and as a nearby source of parts, trained servicemen and complete shop facilities, he can help keep your equipment easy on the overhead for years to come.

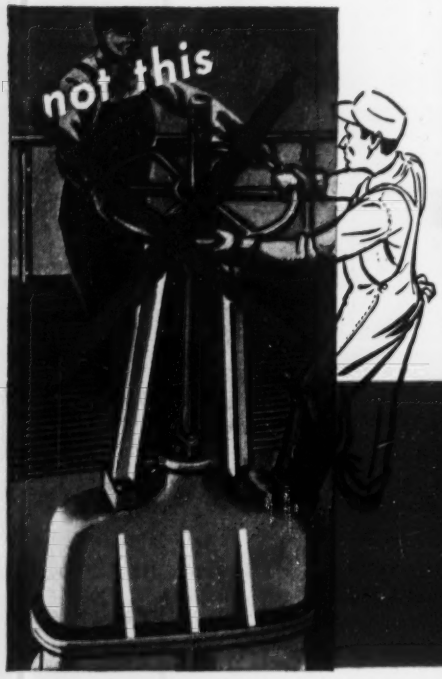
INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

POWER ON PARADE. High-production International TD-14As self-load scrapers alongside burly freight engine as they prepare building site in Minot, North Dakota.

INTERNATIONAL HARVESTER

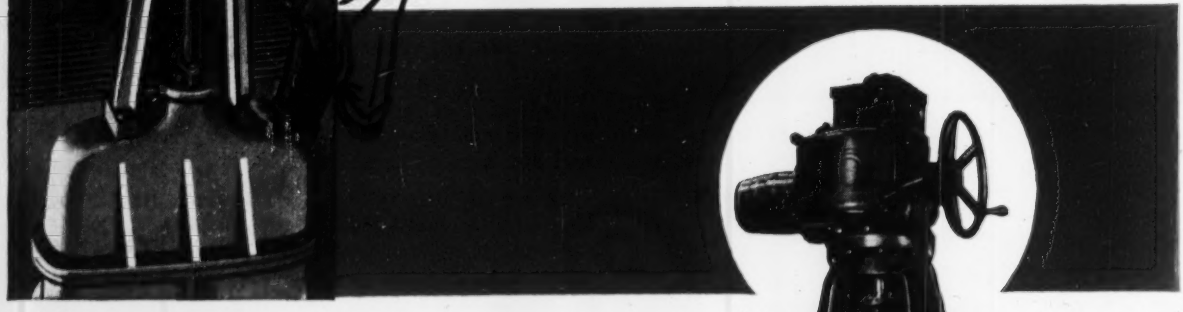
INTERNATIONAL

POWER THAT PAYS

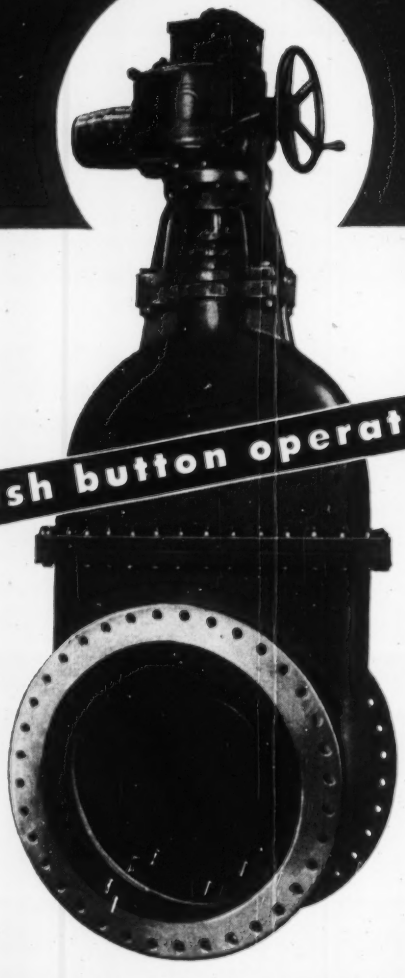


Pushing a Button

is SAFER EASIER QUICKER



LIMITORQUE®



push button operation

LimiTorque opens and closes any type of valve in a fraction of the time required for hand operation. It is *absolutely dependable and safe,* even when pressures are so *high* that manual operation is almost impossible . . . when valves are exceptionally *hot* . . . and where its location is *hazardous* or *inaccessible.*

Thousands upon thousands of these "time-tried and tested" *Valve Operators* are in continuous use, all over the world.

Of course, *LimiTorque* offers a number of "exclusive advantages" in design and construction, which not only give dependable, safe and speedy performance, but which are your *guarantee* against damage to valve stems, seats, discs, plugs, or gates . . . not to mention possible physical injury to operators.

If you have *valve operating problems,* write us —and a "Philadelphia Engineer" will gladly call.

Philadelphia Gear Works, INC.

ERIE AVE. AND G ST., PHILADELPHIA 34, PA.

NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

Industrial Gears and Speed Reducers
LimiTorque Valve Controls

Requirements are that a bid must be at least as much as the agency's field appraisal of the property—which amount has not been announced.

When the sale announcement was made, civic interests—led by the Nashville Chamber of Commerce—jumped in and asked to get the area developed for light industry. The plot already has sewerage facilities, placed there by the Air Force, and was a natural for manufacturers seeking sites.

Keynoting the civic stand is E. B. Stahlman, Chamber of Commerce president. "It would be tragic for the property to be developed any other way than industrially," he said, "It would set the city back several years in its efforts for progress. This is the only site which absolutely meets the needs for planned industrialization."

• **Residences considered**—But reports were that E. C. Armistead, Nashville realtor, is working with a group interested in buying the property for a residential subdivision. He declined, however to name the group he represented or to go into details.

Residential development is being fought because of the location of the tract. It is close to a cemetery and to the joint L&N, NC&StL railroad redevelopment program at Radnor yards. The opinion is that only a low-cost development would be practicable for the site and that such a use would not be the best for that property.

Redevelopment law upheld by Oregon court

Oregon's Supreme Court upheld the constitutionality of the state law under which the city of Portland is attempting to start, a public housing project. The law was the target of a suit by two Portland property owners.

In an opinion handed down late last month, Justice George Rossman wrote:

"The ultimate result which the challenged statute seeks to achieve is to eliminate conditions which cause fires and breed vice or disease, and to substitute for them a use of the property which will render impossible future blight.

"It may be that the measure is ill-advised and eventually may prove to be a disappointment, but the wisdom of enactments is a legislative and not a judicial question. The legislature has the right to experiment with new modes of dealing with old evils."

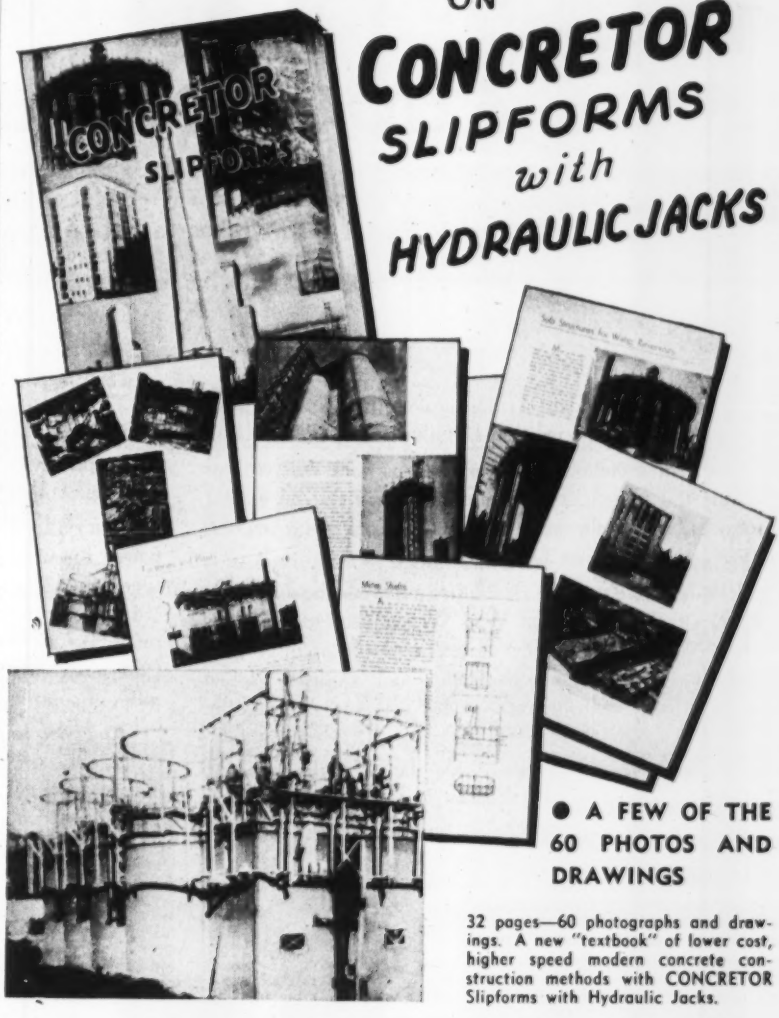
The decision was unanimous in upholding the law and the expenditure of public monies for redevelopment.

(*Municipal continued on page 60*)

New! Just Out!

32 PAGE "TEXT BOOK" ON

CONCRETOR SLIPFORMS *with* HYDRAULIC JACKS



• A FEW OF THE 60 PHOTOS AND DRAWINGS

32 pages—60 photographs and drawings. A new "textbook" of lower cost, higher speed modern concrete construction methods with CONCRETOR Slipforms with Hydraulic Jacks.

***Our** Engineering Department will be pleased to quote you on rental of raising equipment, for any construction, large or small. Standard Slip form machines are available for purchase or lease.*

This COUPON is for your convenience—SEND TODAY—

• GET YOUR COPY NOW!

B. M. HEEDE, INC., 80 BROAD ST., N. Y. 4, N. Y.

Send me a copy of new "Text Book" describing and illustrating CONCRETOR Slipforms.

NAME .....

COMPANY .....

ADDRESS .....

How to start a 6,000,000 yard dam

Building Lucky Peak Dam means more than moving earth. Before a scraper appeared there were back-breaking preliminaries.

Huge Lucky Peak Dam, a colossus of earth, rock and gravel, is racing towards completion 10 miles east of Boise, Idaho.

But the 6,000,000 yards of dirt and rock that will sit astride the unpredictable Boise River will rest on a solid foundation of preliminary work started back in November, 1949—almost 4 years ago.

When swift, powerful earthmovers—there are 19 Caterpillar* DW20s and W20 Wagons, seven Cat* D8s and a No. 12 Motor Grader at work now—begin disgorging their tons of dirt, results are immediately evident. Not so dramatic is the preliminary work, but no dam builder underestimates its importance.

Before a yard of earth could be moved to the dam site, miles of roads had to be relocated, a steel-ribbed diversion tunnel had to be burrowed, drilling had to be finished, temporary roads had to be built and maintained, gravel plants had to be set up, land needed had to be cleared and leveled on schedule.

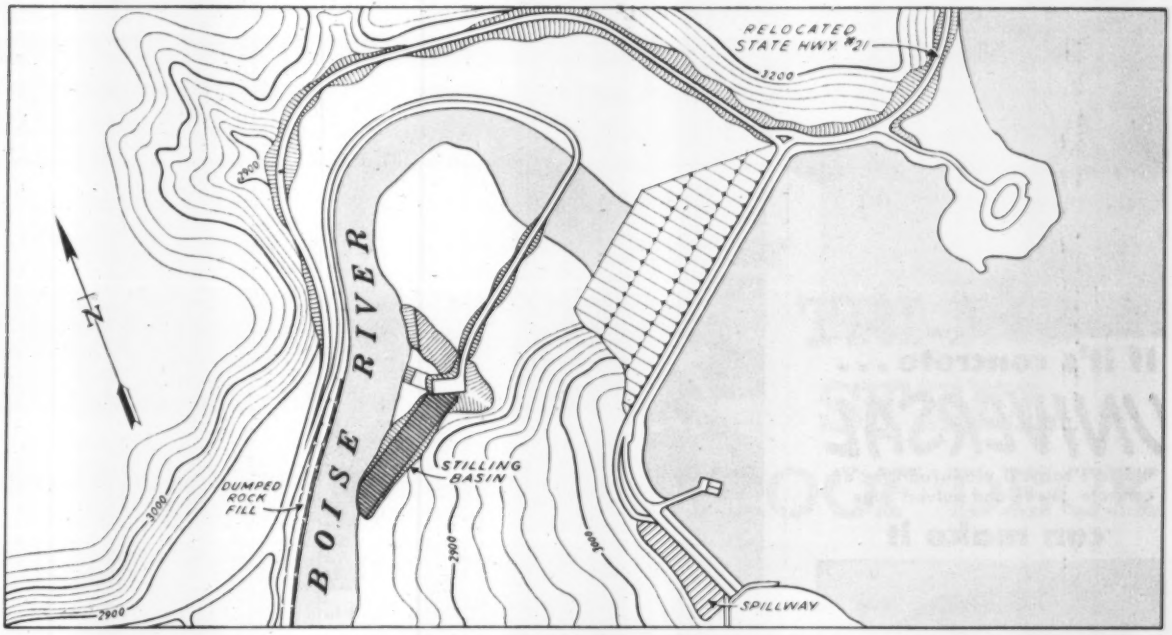
This, then, was the job of Morrison-Knudsen, Terteling, Macco, and Puget Sound Construction Co. And the companies put their trust for this diversified work in a variety of dependable Caterpillar products.

Caterpillar D13000 Diesel Engines provided the steady power for Gardner-Denver compressors for drilling. An ingenious homemade loader was mounted on a durable Cat D8 Tractor for heavy loading. Another D8—this one mounting a No. 8A Bulldozer—teamed with a versatile Caterpillar No. 12 Motor Grader on relocation of 31.3 miles of county, farm and state roads.

An Eimco loader was mounted on a rugged Caterpillar D4 Tractor for work in the diversion tunnel which moled 1,161 feet through an almost solid rock canyon wall. The tunnel was holed through in 106 days.

These were the first steps in building the $18,500,000 Lucky Peak Dam on the Boise. Finished, it will tower 328 feet and be a quarter of a mile thick at its base. Behind

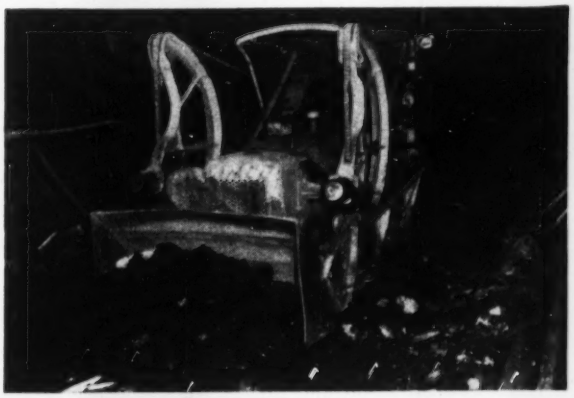
IMPORTANT PART of the preliminary work was drilling on the diversion tunnel. These three Gardner-Denver compressors are powered by three Caterpillar Diesel D13000 Engines.



GENERAL PLAN FOR LUCKY PEAK DAM, its diversion tunnel, relocated roads, spillway, stilling basin, is shown on this map. The dam, 10 miles east of Boise, Idaho, will cost approximately $18,500,000.

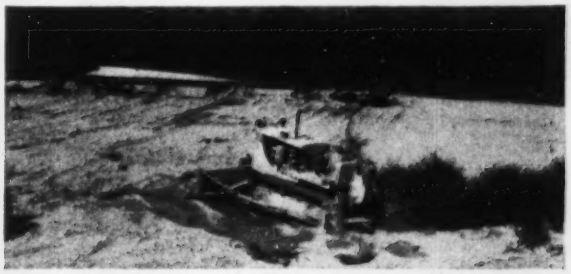
its 2,200 foot crest length, it will stem more than 300,000 acre feet of water draining into the reservoir from a 2,600 square mile area.

Important work calls for reliable equipment. Big contractors standardize on Caterpillar products for a number



IN THE 1,161 FOOT DIVERSION TUNNEL an Elmco loader mounted on a Cat D8 Tractor works swiftly. Tunnel was holed through in only 106 days!

of reasons. They know its simple, rugged construction means longer life and less down time. The engines are economical to operate, using No. 2 furnace oil for fuel without fouling. And maintenance costs less because parts are interchangeable and good dealer service is available close to any job location.



BELOW THE DAM SITE, a rugged Caterpillar D8 Tractor equipped with a No. 8A Bulldozer clears and levels land. Contractors were Morrison-Knudsen, Terteling, Macco, and Puget Sound Construction Co.

An aid to this standardization program is the fact that leading manufacturers of excavators, compressors and other equipment can supply Cat Engines in the machines they build.

When this rugged equipment has completed its job, the imprisoned waters of the Boise River Canyon will be a key to a new farm empire, free from the menace of flash floods.

Caterpillar equipment will have carved out a new, richer life for some 100,000 Idaho citizens.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

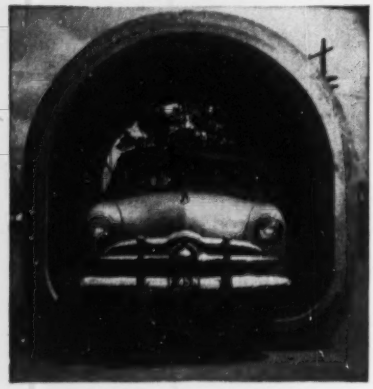
*Both Cat and Caterpillar are registered trademarks—®

If it's concrete . . .

UNIVERSAL

world's largest manufacturer of concrete sewer and culvert pipe

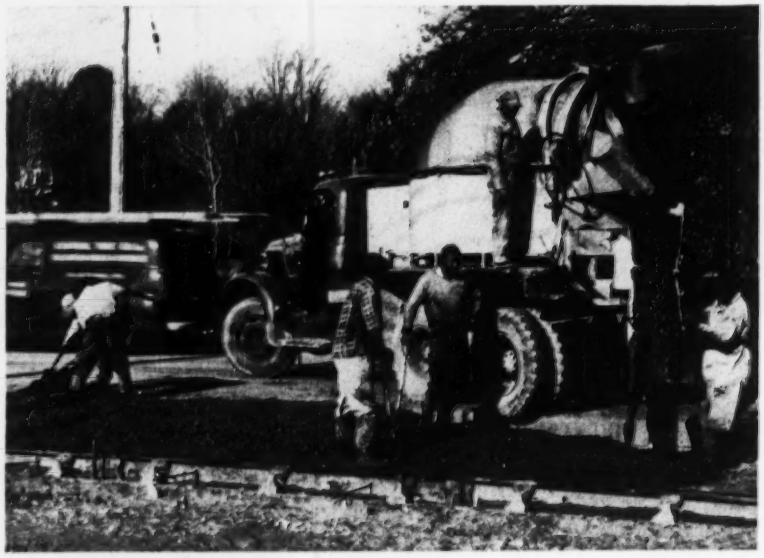
can make it



26 plants for convenient, economical service.

30 years' experience in pipe, cribbing, precast manholes, riverweights, flat base pipe. Name it, we make it!

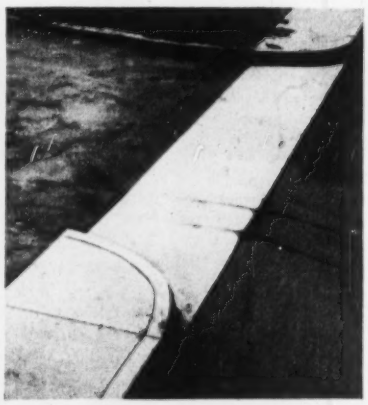
UNIVERSAL
CONCRETE PIPE CO.
297 South High Street
Columbus, Ohio
Publishers of famous "Pipe Dreams"



DARK COLORED CONCRETE being placed in a new pavement on Maryland Avenue on the outskirts of Wilmington, Del.

Delaware darkens concrete pavement to reduce total paving outlay

Concrete laid by the Delaware State Highway Department in repaving Maryland Ave. between the city of Wilmington and the suburban town of Newport was darkened by the addition of emulsified carbon black. This was done to avoid the added cost of covering the slab with sheet asphalt, which is standard procedure for paving work within the city. It was done also to diminish glare, and heat reflection and to provide a contrast in color at the curb lines. The dark color is expected to help in ice control.



CURB, SIDEWALKS AND CROSSWALKS of uncolored concrete contrast sharply with the darkened surface of the pavement.

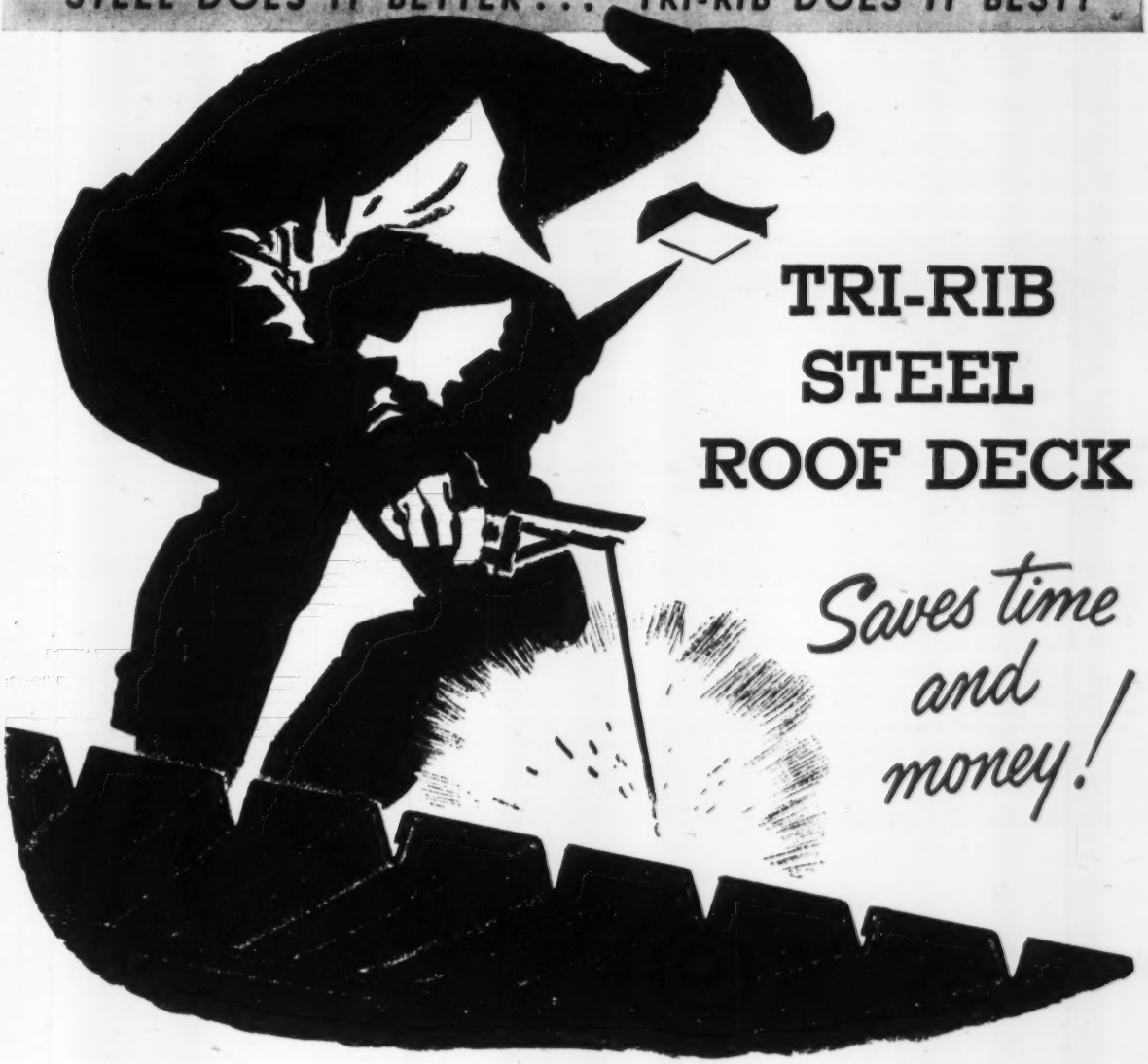
The pavement is of 9-in. uniform thickness reinforced concrete, 60 ft wide between curbs.

Maryland Ave. serves as a main approach to an automobile assembly plant and a paint-pigment plant as well as a direct route to the Delaware Park Race Track. Daily traffic averages 20,000 vehicles, and during the race season reaches 40,000. Although the newly paved section is outside the city limits, the State Highway Department wished to have the appearance of the pavement surface conform to that of the city streets. Consequently, two pounds of carbon black per sack of cement were added to the concrete near the city line, with the amount reduced to one pound in the rural area. Curbs, sidewalks and cross walks are of uncolored cement.

The job was built using a six-bag mix delivered by truck from a central mixing plant. The carbon black was added at the chute from the mixer into the truck. The haul to the job is about 3½ miles. At the site, the direction of rotation of the truck body was reversed for thirty seconds before the concrete was discharged onto the roadway through a special baffled chute. This procedure provided adequate dispersion of the carbon black through the concrete and limited to the delivery trucks the cleaning of concrete equipment trucks.

Pigment used in the colored con-

STEEL DOES IT BETTER . . . TRI-RIB DOES IT BEST!



TRI-RIB STEEL ROOF DECK

Saves time and money!

GOES ON FASTER! Grooved for simple end-over-end connection, Tri-Rib fastens to purlins either by clipping or welding. No complicated dovetails or attachments. And Tri-Rib's sheet size is ideal for all installations – 18-inch width, lengths up to 22 feet.

LIGHTER, STRONGER! Tri-Rib is lighter, yet stronger than any comparable roofing. Because of this lightness, dead load is smaller, permitting use of lighter supporting structure, fewer columns, shallower footings.

SAVES STEEL! By reducing dead loads as much as 8 to 22 lbs. per square foot, Tri-Rib saves steel, both in the use of lighter structural supports, as well as in the elimination of sub-purlins.

LASTS LONGER! A roof of Tri-Rib Steel Deck is truly a "lifetime" roof. Made of rugged, corrosion-resistant Cop-R-Loy, Tri-Rib is designed in accordance with specifications adapted by A.I.S.I. for light gauge structures, dated January, 1949.

For specifications, consult Sweets' Files, or write us.

WHEELING CORRUGATING COMPANY
WHEELING, WEST VIRGINIA

ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT KANSAS CITY
LOUISVILLE MINNEAPOLIS NEW ORLEANS NEW YORK PHILADELPHIA RICHMOND ST. LOUIS

Wheeling

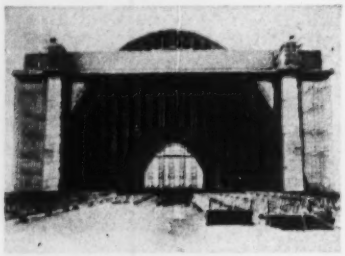
PLAY IT SAFE! BUILD PROFITABLY with

SAFWAY Tubular Steel Scaffolding

—first in the field!

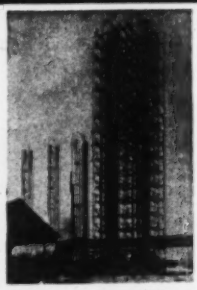
MAKING THE MOST OUT OF TUBULAR STEEL is standard Safway practice. That's why you get substantial savings in operating costs with Safway scaffolding . . . a fact well supported by experience of builders and contractors everywhere. It'll pay you to investigate the advantages of America's safest and most popular scaffolding. Write today for more facts. Or contact one of the 137 Safway dealers near you.

Towers of Webbed Steel



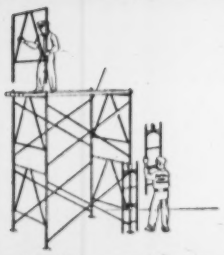
92 miles of tubular high carbon steel go into 50 towers built of Safway scaffolding. Each Safway tower supports 20 tons at the U.S. Navy hangar on the East Coast.

Reaching for the Sky



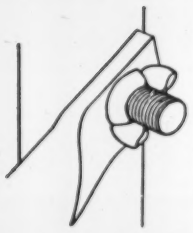
Straddling base equipment, Safway scaffolding reaches high at this Dallas, Texas oil refinery. Safe, strong Safway equipment is a favorite in fabulous Texas oil country.

When Time Is Money



Light weight Safway end frames are easily handled by one man. You need only a few basic interchangeable members to assemble scaffolds of any shape or height. Two men can easily erect 30 feet of scaffolding in 30 minutes.

Safety Builds Profits



Notice how Safway design gains its strength. Trouble-free wing nuts solidly hold carbon steel tubular cross braces to end frames; cross braces pivot on hardened steel, Hi-Shear rivets that really last.

SAFWAY STEEL PRODUCTS INCORPORATED
6225 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

RENTED and SOLD by distributors everywhere

crete was "Air Entrained Dispersed Carbon Black" supplied by the A. C. Horn Co., New York. Its use added from $0.35 to $0.65 to the cost of a square yard of pavement, depending on the density of the color.

R. A. Haber is chief engineer of the department. Tests to determine the amount of carbon black to add were made by Ernest A. Davidson, materials engineer for the department. L. W. Novinger is design engineer and John I. Calahan was division engineer in charge of the work. General contractor was the John Julian Construction Co. of Wilmington. Contracts for additional pavement of this type in the same area were let recently.

Improved lighting subject of test in tunnel

An existing tube of the New York Port Authority's Lincoln Tunnel (connecting New York and New Jersey under the Hudson River) will serve as a testing ground for an improved lighting fixture to be used in the tunnel's third tube, now under construction.

As the plan is set up, authority engineers will install a modified fluorescent lighting fixture of standard design in a 100-ft section of the tunnel's south tube. Experiment results are expected to include:

- A well -lighted tunnel uniformly illuminated on the ceiling, walls and roadway to provide maximum driving safety.
- Elimination of flickering reflections and contrasting illumination by utilizing straight-line lighting.
- Economy of maintenance.

Reflecting surfaces and lighting source will be protected by a water and dust-tight enclosure. It is hoped the unit will withstand the periodic washing of the tunnel, including the action of the chemicals now being used in the washing operation.

The circuit and lamp voltages will be matched in the installation. This will allow a simple inexpensive choke blast to supplant the conventional transformer.

Denver acts to cut cost of annexing developments

Denver's city planning commission is working out a fee-admission system to be applied in future annexations to the city. In effect, the plan requires new areas to buy stock in the city and help defray the costs of municipal services required by the annexed areas.

Fees will vary according to the type

(*Continued on page 65*)

SMITH-FRANCIS TURBINES AT TOKETEE

ADDING to an ever-growing list of users, the Toketee Development of the California-Oregon Power Company has installed three vertical Smith-Francis units of 17,600 H.P. capacity each, under 394 feet head, operating at 400 r.p.m. The turbine runners are stainless steel. The pressure regulators are of a new horizontal discharge design of the Howell-Bunger Valve type.

Put your hydraulic problems up to us!

S. MORGAN SMITH Co.

YORK, PENNA. U.S.A.

Our Whites do more work!

REPORTS from White owners in all kinds of public services everywhere: "Our Whites do *more* work!"

Functional design of this modern truck adds efficiency... saves time... in road construction and road repair. Driving ease, roomy cab, and outstanding maneuverability mean more work done per day.

The exclusive power-lift cab assures substantial maintenance savings. And White dependability in every feature means longer life... lower operating cost.

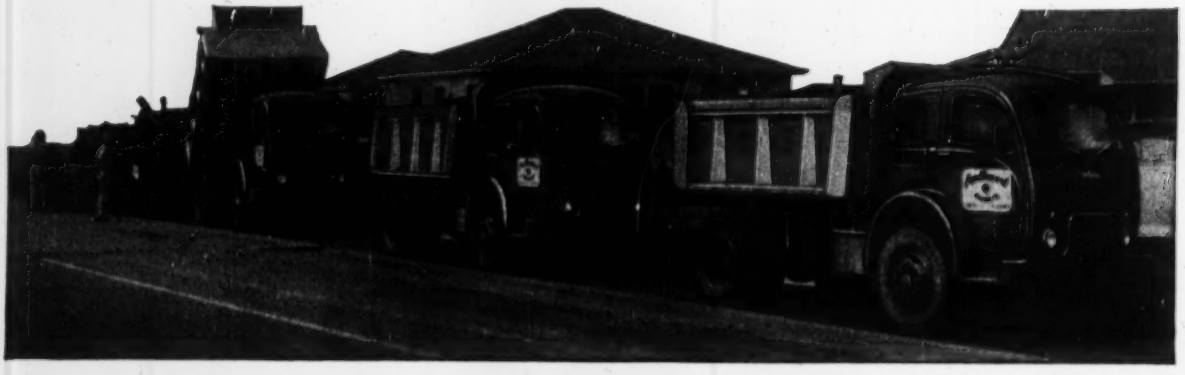
In public services everywhere, the White 3000 is today's way to do more work..in less time..at lower cost.

THE WHITE MOTOR COMPANY
Cleveland 1, Ohio

White 3000 Production Line Saves Time — One of a fleet of White Model 3022 PLT's owned by Southwest Paving Co., Sun Valley, Calif., operators of some of the world's largest asphalt plants. This unit hauls 9½-tons of asphalt . . . speeds paving projects for this well-known paving contractor.

White

FOR MORE THAN 50 YEARS THE GREATEST NAME IN TRUCKS



of area being annexed. Under consideration at present is the Virginia village area of 600 acres southeast of the city limits. This 600-home development has paved streets, water and sewerage facilities. The fee for annexation probably will be around $50 a home.

Higher fees will be charged in areas that require immediate expenditures by the city government such as those for water and sewer extensions and street improvements.

Last March the Denver city council turned down a request for annexation by a 375-acre area southwest of the city. City Planning Director William F. Henninger said annexation would force the city to expend $4,820,271 for municipal services and schools in that area in the next five years.

First big contract let for Philadelphia center

A 20-story, $15-million office building will be the first structure in Philadelphia's Penn Center, according to a recent announcement by the Pennsylvania Railroad.

This marks the first result of the long planning and negotiations for the Rockefeller Center-type development that is to occupy the midcity space vacated by demolition of old Broad Street station and the so-called Chinese Wall (ENR, Nov. 6, 1952, p. 48).

The skyscraper will be built by Uris Bros., New York specialists in office-building erection and management, who acquired the entire block from 15th to 16th streets and from Market to Pennsylvania Blvd. Construction is scheduled to begin this summer. Bids may be taken about July 1.

Pittsburgh redevelopment gets financial aid

The ambitious plan of Pittsburgh, Pa., to redevelop a severely blighted section, known locally as the "Hill District" (ENR, April 23, p. 49), got a big lift from two separate million-dollar allocations.

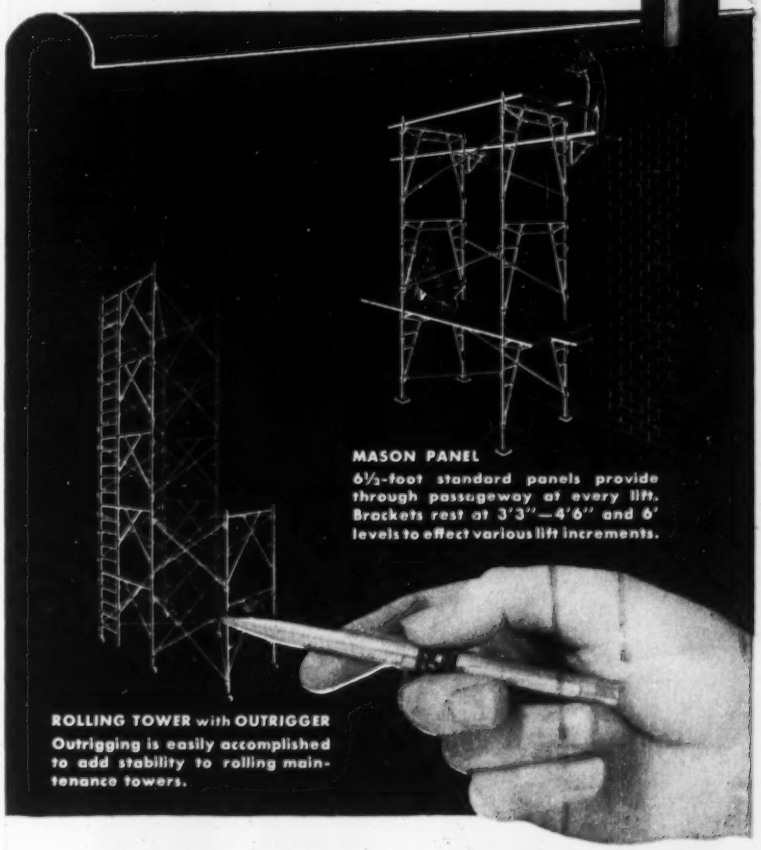
First, the Edgar J. Kaufman Charitable Trust confirmed that it would make a million-dollar gift toward construction of a civic sports center.

Then the state of Pennsylvania allocated another million dollars for the city's urban redevelopment authority for use in purchasing properties in the 106-acre area.

• **Gift terms**—Under the terms of the Kaufman gift, the city "and others" must have available sufficient funds

(*Continued on page 67*)

Plan your Savings using UNIVERSAL Ezebilt SCAFFOLDING with the "Gravity Lock"


MASON PANEL
6½-foot standard panels provide through passageway at every lift. Brackets rest at 3'3"—4'6" and 6' levels to effect various lift increments.
ROLLING TOWER with OUTRIGGER
Outrigging is easily accomplished to add stability to rolling maintenance towers.

- Completely automatic locking mechanism. Requires only one man to assemble.
- Permits single bracing—reducing number of parts required.
- Swivel action permits "racking down", scaffolding circular objects, offers exceptional flexibility.
- Goes up faster—No bolts to master.

Ask about "ENDLOK" Tubular Scaffolding for difficult and unusual applications.

Distributors throughout the country—Write for Complete Descriptive Catalog

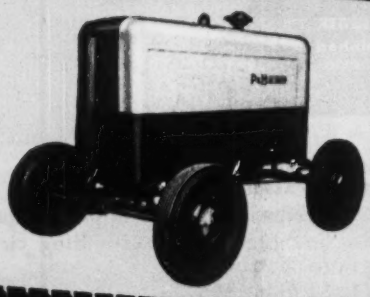
UNIVERSAL MANUFACTURING CORP.
World's Largest Producer of Steel-Panel Scaffolding
E-6 NORTH STREET • ZELIENOPLE, (PITTSBURGH DISTRICT) PA.
For Tubular Towers Catalog—Write our AMERICAN TUBULAR ELEVATOR CO. DIVISION

11 reasons you're money ahead

-when you weld with a P&H Engine-Driven DC Arc Welder

1. Controls are convenient, marked for easy identification.
2. Dial-lectric Remote Control provides instantaneous heat control right at the work.
3. Magnetic-type across-the-line starter provides low-voltage and overload protection.
4. Specially designed interpole provides a very stable arc.
5. Dynamically balanced armature operates more smoothly — has high mechanical efficiency — provides greatly reduced maintenance and longer welder life.
6. Separate fans for both generator and motor give more cooling capacity.
7. Prelubricated bearings eliminate regular-interval greasing, cut maintenance costs.
8. Easy accessibility makes inspection simple and speedy.
9. Light weight makes unit easier to move.
10. Auxiliary AC power supply (3KVA) lets you run power tools and floodlights.
11. Weatherproof construction protects welder in any climate.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4404 West National Avenue, Milwaukee 46, Wis.



The P&H WN-301 DC Welder is available in 2-wheel and 4-wheel mountings. Ask your P&H representative or distributor for further information — or write us.

2590

the P&H Line

TRUCK CRANES · DIESEL ENGINES · POWER SHOVELS · PRE-FABRICATED HOMES · ELECTRIC HOISTS · SOIL STABILIZERS · WELDING EQUIPMENT · OVERHEAD CRANES

to finish the project before the trust will pay the money to an unspecified agency—presumably a state-created authority.

The million dollars allocated by the state is in addition to $6 million in federal funds reserved for the project. The federal money will be available upon completion of final redevelopment plans and negotiation of a loan-and-grant contract.

The Pittsburgh Housing Authority disclosed recently that it will be ready in about a week to begin taking care of some of the 8,225 persons who will be displaced before construction can get under way.

Housing, shopping planned for two Southwest cities

The $12-million "Gulfgate" shopping center in Houston, Tex., is scheduled for a construction start within the next two months; at about the same time work will be getting under way on a new $3-million housing addition in Tulsa, Okla.

Houston's center is said to be the largest in the Southwest. It will house between 95 and 100 stores, including a major department store. There will be parking facilities able to accomodate 6,000 vehicles.

Site of the project is at the junction of the Gulf and LaPorte freeways, providing access to the entire eastern end of Harris County.

John Graham of Seattle, Wash., is the architect.

• **Tulsa housing**—Tulsa's housing project will include 380 low-cost homes on a 93-acre tract. Tentative expansion plans include a major shopping center. Location is in the northeast side of town.

Elsewhere in Tulsa, housing construction is running into a snag near the municipal airport.

Property owners in the vicinity have asked the FHA to relax the regulation against new construction within a half-mile radius of the airport boundary and for further distances at the ends of the principal runways of the airport.

The FHA, however, has no intention of changing its present regulations, Orris H. Carter, assistant director of the regional office, said.

By way of explanation, he added that in addition to the noise, vibration and dust nuisances which cause lowered property values, another series of plane crashes similar to those near the Newark, N. J., airport would cause an additional slump in surrounding property values.

Cut your drafting costs with OZALID!

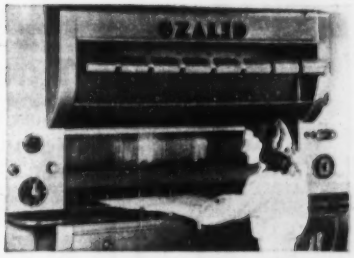
There's an OZALID Machine for every size job!

The Desk-Top OZAMATIC

The perfect machine for copying specification sheets and drawings up to 16" wide! Has synchronized printing-developing speeds up to 30 ft. per minute. Can deliver up to 1,000 letter-size copies per hour at a cost of less than 1½¢ each!

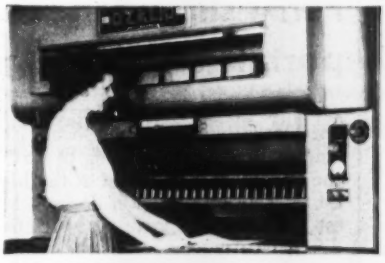
The Ozalid Streamliner

This moderately priced machine makes copies up to 42" wide at speeds up to 14 ft. per minute. Occupies only 11 sq. ft. floor space.



The Ozalid Super-B

This air-cooled model has automatic controls, and copies up to 42" wide at 25 ft. per minute. Occupies 18 sq. ft. floor space.



The Ozalid Printmaster

Accommodates drawings up to 42" and 54" wide. Automatic stacking, front and rear delivery. Copying speeds up to 30 ft. per minute.

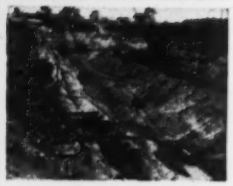
For Full Details, Send in This Coupon

OZALID, Dept. ER-11
General Aniline & Film Corp.
Johnson City, N. Y.
Gentlemen:
Please send me full information about your Ozalid machines.
Name .....
Company .....
Position .....
City ..... State .....

Cut Copying Costs...use **OZALID**

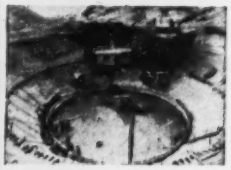
Johnson City, N. Y. A Division of General Aniline & Film Corporation
"*From Research to Reality.*"
Ozalid in Canada — Hughes Owens, Ltd., Montreal

WET JOBS

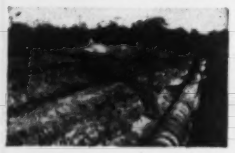


Whether it's

HEAVY CONSTRUCTION



BUILDINGS



SEWERAGE

or any other type of wet work

For "quick-dry"... specify...

GRIFFIN

WELLPOINT CORP.

881 East 141st Street, New York 54, N. Y.
Hammond, Ind. Houston, Tex. Jacksonville, Fla.

In Canada: Construction Equipment Co., Ltd.
Toronto Montreal Halifax

"GUNITE"

THE PNEUMATIC MORTAR FOR

Dam Repair and Reconstruction
Reservoir Lining
Bunker and Stack Linings
Tunnels and Pipe Linings
Structural Steel Encasements
Prestressed Tanks
Restoration of Defective Masonry Structures
High and Low Pressure Grouting

PHONE OR WRITE FOR ESTIMATES

MUrryhill 3-1973

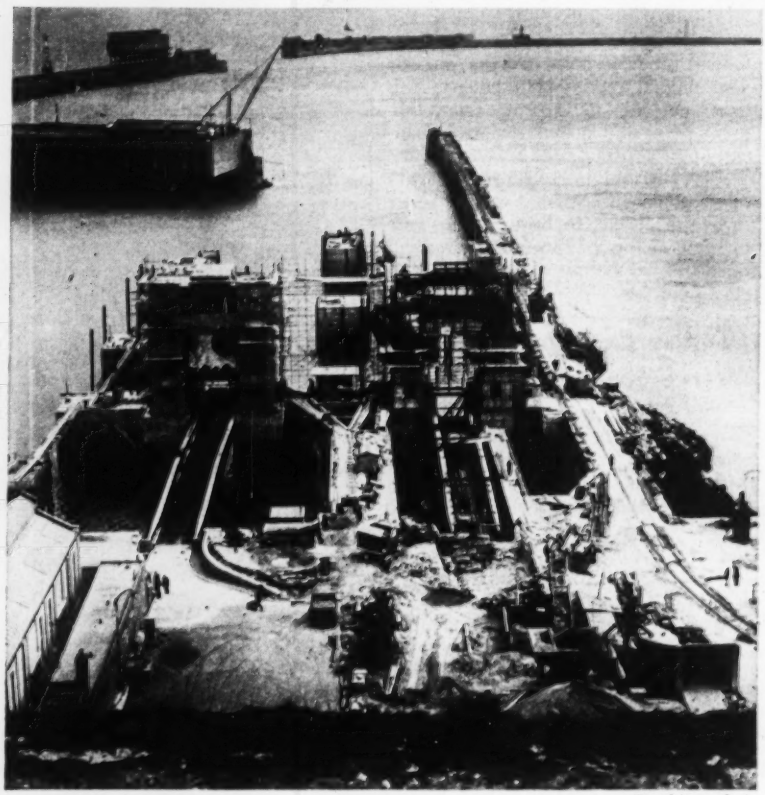
... for the finest in Pneumatic Mortar Work

LEWIS & McDOWELL, Inc.

GUNITE ENGINEERS & CONTRACTORS

285 MADISON AVE. NEW YORK CITY

INTERNATIONAL



Combine photo

LOADING PORTALS, of reinforced concrete, for a pair of ferry slips in Dover, England, allow the seaward end of vehicle loading ramps to move up or down, compensating for an extreme difference between high and low water.

Ferry slip unaffected by high tides: portals allow bridge to rise 34 ft

Vehicle loading ramps for the Eastern Docks ferry slips at Dover, England, will allow the loading of cars on the upper decks of ferries at the highest tides, or on the lower decks at lowest tides: a matter of a 34-ft, 6-in. differential movement at the seaward end of the ramps.

The 140-ft, 140 ton ramps will be raised and lowered by power hoists in the tops of the 87-ft concrete portals. Counterweights which are equivalent to the dead load of the ramps have been placed in the sides of the portals.

An automatic compensating device will make the end of the ramp follow the ferry deck as it varies with the tide or loading. Automatic limit switches, situated under the ramps, will be controlled by variations in the angle of the span itself. The limit switches will allow stopping vehicles and disengaging the ramp and ferry deck during periods when extreme flood tides and storms occur.

• **Largest harbor**—The Eastern Docks harbor at Dover is said to be the largest artificial harbor in the world. Placed right against the chalk cliffs of Dover, the installation handles the transhipment of vehicles to and from the continent at a rate that is said to be more than 100,000 a year.

The harbor was created with great stone jetties extending out to sea, and recently the West jetty was topped with a 20-ft wall to protect the harbor from prevailing and often stormy winds. This jetty was also widened by 10 ft to support a traveling crane operating along 600 ft of its length.

FOUR WORDS

that spell sound insurance protection for your foreign interests

AMERICAN

AFIA, through its member companies, has been a leader over the years in providing dependable insurance protection on the foreign activities of American business and individuals. This protection is founded upon the sound principles of well-known American-type insurance. It is the kind that pays claims in American dollars when the premiums also are paid in American currency.

FOREIGN

AFIA's world-wide network of over 500 offices and agents provides you with prompt and efficient service. Through day-to-day contact with these offices, AFIA keeps abreast with ever-changing foreign laws and insurance regulations which affect your insurance — your protection.

INSURANCE

AFIA offers you practically every type of insurance except life. Liability, fire, explosion, lightning, windstorm, workmen's compensation, automobile and marine are only a few of the many coverages AFIA provides.

ASSOCIATION

AFIA is an association of 24 outstanding American capital stock insurance companies. Their integrity and great financial strength are your assurances of foreign insurance protection — as sound as money can buy.

Your local insurance agent or broker will be glad to get full information from AFIA on any specific risk.

AMERICAN FOREIGN INSURANCE ASSOCIATION

161 WILLIAM STREET • NEW YORK 38, NEW YORK

CHICAGO OFFICE . . . INSURANCE EXCHANGE BUILDING, 175 WEST JACKSON BLVD., CHICAGO 4, ILLINOIS
LOS ANGELES OFFICE . . . PACIFIC MUTUAL BUILDING, 523 W. 6th STREET, LOS ANGELES 14, CALIFORNIA
SAN FRANCISCO OFFICE . . . . . 98 POST STREET, SAN FRANCISCO 4, CALIFORNIA
WASHINGTON OFFICE . . . . . WOODWARD BUILDING, 733 15th STREET, N. W., WASHINGTON 5, D.C.

AN ASSOCIATION OF AMERICAN CAPITAL STOCK FIRE, MARINE AND CASUALTY INSURANCE COMPANIES PROVIDING INSURANCE PROTECTION IN FOREIGN LANDS

Long Term Investment...

Engineers and public officials who specify sewer-pipe are stewards for the taxpayers.

They must be mindful of near term economy — but even more important — they must be sure that their purchase is a sound long term investment. For sewer-pipe must serve for many years.

That is why leading engineers and officials know they can with confidence stake their reputations on either Universal Vitrified or U. S. Concrete Pipe.

CITY OF MIAMI
CONTRACT SR 321
24" Reinforced Concrete Pipe
8 ft. sections with Tylox
Rubber Couplings

DIRECTOR OF ENGINEERING
Arthur E. Darlow
City of Miami,
Florida

CONTRACTOR
L. E. W. Corporation
Miami,
Florida

PRODUCTS

Sewer Pipe (Vitrified)	Slipseal Sewer Joint	Flue Lining
Sewer Pipe (Concrete)	Segment Sewer Block	Stove Pipe
Vitrified Liner Plates	Meter Boxes	Chimney Tops
Tylox Flexible Rubber Coupled Vitrified Pipe	Ship Lap Wall Coping	Chimney Pots
	Septic Tanks	Fire Brick
Aerodrane Filter Block	Drain Tile	Fire Clay

Vitrified Clay Plate Lined Concrete Pipe

SALES OFFICES:

BALTIMORE, MD.—HALETHORPE BRANCH—Box 7769. Tel. Elkridge 790
PHILADELPHIA, PA.—P. O. Box 30, BRISTOL, PA. Tel. Bristol 5571
Tel. Enterprise 6015
CINCINNATI, OHIO—P. O. NEWTOWN, OHIO—Box 215. Tel. Locust 7846

FACTORIES:

BALTIMORE, MD., PALMYRA, OHIO (2), CINCINNATI, OHIO, PHILADELPHIA, PA., NEW PHILADELPHIA, OHIO, UHRICHSVILLE, OHIO (2)

UNIVERSAL SEWER PIPE CORPORATION
UNITED STATES CONCRETE PIPE CO.

● *GENERAL OFFICES* ● 1500 Union Commerce Building ● CLEVELAND 14, OHIO

Eastern Publisher Service photo

MODEL OF AIRLINE ELEVATOR LOADING PLAN for taking on passengers and baggage shows elevator at plane's side for delivering passengers. Elevator retracts into apron, and plane rolls down inclined ramp to engine starting area.

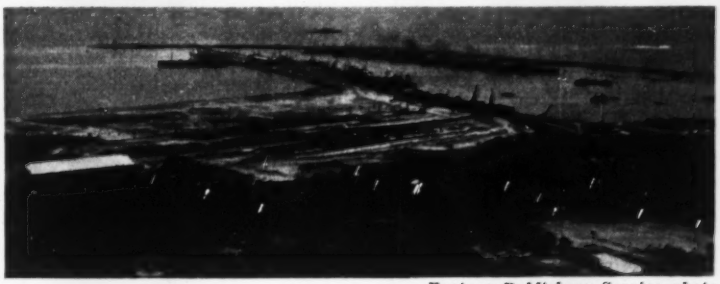
Aerodrome to guard against jet blasts

To avoid the scream and blast of commercial jet airliners of the future, the Australian Department of Civil Aviation has proposed the design of an airport where subways and elevators will move passengers to their planes.

The design will have the plane taxi up an approach ramp to apron level, turn into a 3% downgrade ramp, cut its jet engines, and roll down this ramp to be stopped by chocks elevated out of the ramp. These chocks will stop the plane with its door exactly opposite an elevator hatch in the runway. Then an elevator, with passengers aboard, will rise up to the level of the plane door, and the elevator cabin will roll forward to allow passengers to step directly into the aircraft.

The elevator will then descend, the chocks in front of the plane will be retracted, and the plane will roll down the ramp to the engine starting area.

Elevators, built under the elevated apron section and reached by subway from the main aerodrome building, will serve a number of such points in the loading area.



Eastern Publishers Service photo

Gold Coast port capacity doubled

Port extensions at Takoradi, the Gold Coast, Africa, have increased the port's capacity to handle tonnage of bauxite, timber, and oil from 1,000,000 to over 2,000,000 tons a year. The extension involved leveling an 80-ft hill to put in a railway marshaling yard (in foreground). Spoil from the hill reclaimed 50 acres of land.

Costing $9-million, the new extensions included construction of 1,400 ft of new deep-water quay; installation of 42 electric cranes; new timber, bauxite, and oil berths. Native labor, trained on the job, was used almost exclusively in the construction work. Taylor Woodrow, Ltd., of West Africa was the contractor, and Rendel, Palmer & Tritton of London were consulting engineers.

SURVEYING
Theory and Practice

4th Ed.—Just Published!

Thoroughly covers surveying from simple selection of instruments to complex handling of map projections. The comprehensive reference data in this standard work shows you the fundamental tools with which one surveyor works . . . how to perform operations basic to all surveying . . . and how to run complete, intricate surveys. New edition includes details on new equipment, latest photogrammetric methods, summary tables of errors in chaining, and many other revisions and additions. **By R. E. Davis, Prof. of Civil Eng., and F. S. Foote, Prof. of Railroad Eng., Univ. of Calif. 4th Ed. 1021 pp., 436 illus., $8.00**

SOIL MECHANICS, FOUNDATIONS, AND EARTH STRUCTURES

Covers the theory of soil mechanics, together with the principles and practices of designing and constructing foundations and earth structures, indicating the important relationship of these three subjects. Emphasizes experimental data and field observation, giving numerous examples of both successful and unsuccessful structures. Covers the estimation of the shearing strength of soils, lateral earth pressures, the effects of plastic flow, sensitivity of various clays to remolding, etc. **By G. P. Tschebotarioff, Prof. of Civil Eng., Princeton Univ. 655 pp., over 400 illus., $7.50**

WATER SUPPLY AND SEWERAGE

3rd Ed.—Just Published!

Presents concisely and authoritatively the essential principles and practices in the design and operation of water and sewer works. Takes up development of water supplies, construction materials, pumps, and water distribution systems. Relating sewerage problems to water supply, it explains design and maintenance of sanitary, storm, and combined sewerage systems, pollution, and treatment methods. **By E. W. Steel, Prof. of Sanitary Eng., Univ. of Texas. 3rd Ed. 582 pp., 241 illus., $8.00**

MATHEMATICS for ENGINEERS

Covers every phase of mathematics the engineer is likely to meet from algebraic notation, determinants and linear equations through differential calculus, curve analysis, integration, summation, etc. This revised edition contains much added material, including chapters on Differential Equations and Dimensional Analysis with emphasis on the Buckingham Pi theorem. **By Raymond and Richard Dull, Webster-Chicago Corp. 3rd Ed. 422 pp., 671 illus., $8.00**

SEE THESE BOOKS 10 DAYS FREE—

McGraw-Hill Book Co., 330 W. 42nd St., NYC 36

Send me book(s) checked below for 10 days examination upon approval. In 10 days I will remit for book(s) I keep, plus few cents for delivery, and return unwanted book(s) postpaid. (We pay for delivery if you remit with this coupon; same return privilege.)

☐ Davis & Foote—**SURVEYING**—$8.00
☐ Tschebotarioff—**SOIL MECHANICS**—$7.50
☐ Steel—**WATER SUPPLY & SEWERAGE**—$8.00
☐ Dull & Dull—**MATH FOR ENGINEERS**—$8.00

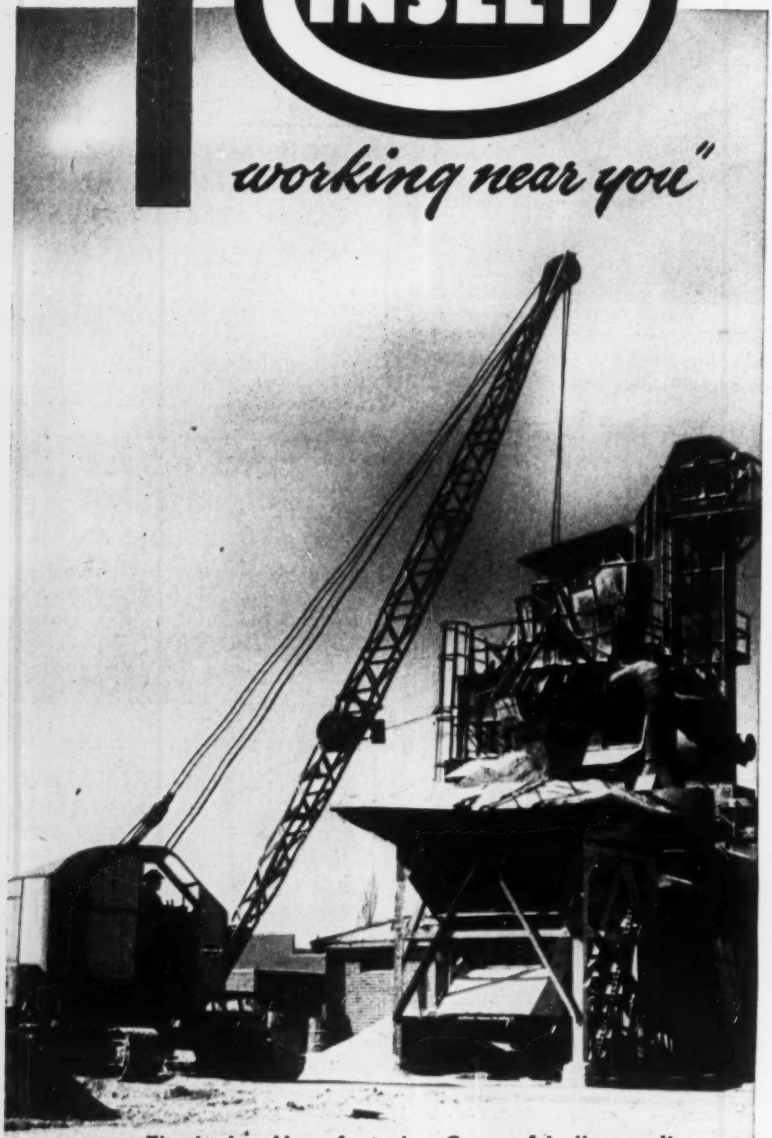
(Print)
Name .....
Address .....
City .....Zone.....State.....
Company .....
Position NR-6-4

This offer applies in U. S. only

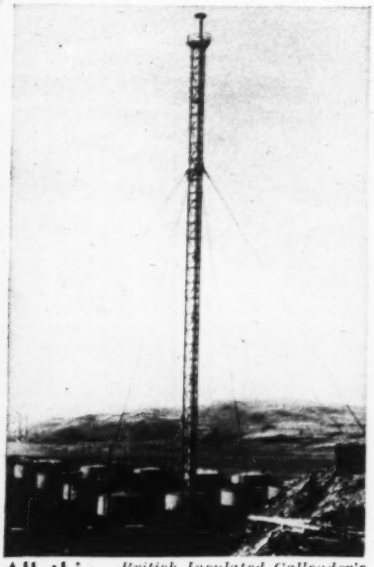
"There's an

INSLEY

working near you"



The Insley Manufacturing Corp. of Indianapolis has been manufacturing construction equipment since 1907. The Insley Line includes excavators and cranes, 5 to 30 ton capacity—rubber or crawler mounted—gasoline, diesel or electric powered. There's an Insley working near you.



All this *British Insulated Callender's Construction Co. Ltd. photos*

on a 2-in. steel ball

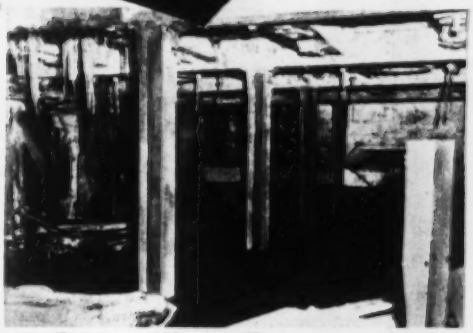
Flare stack, 250 ft high, rests on 2-in. steel ball set in a convex bearing plate. The steel ball, on five such masts in Wales, takes the weight of the 21-ton stack, the pressure of its supporting guy wires, and the shear load from the wind. For burning waste gases from a catalytic cracking plant and weighing only two-thirds of the usual self-supporting structure, these masts need no heavy foundations in the marshy ground where they had to be placed. The foundation is an octagonal, reinforced concrete raft, 1-ft deep and 30 ft wide, with eight, 18-in.

What is the *BEST* method for pile encasement?

HERE'S THE PREPAKT ANSWER

the PROBLEM

. . . to encase the 12-inch steel H-piles supporting a Canadian pulp and paper mill. The beams rest on river bedrock and are normally immersed in 18-20 feet of water containing tannic acid wastes from the mill. Due to these conditions, the beams had been badly corroded, necessitating repair or replacement.



Corroded condition of H-piles prior to Prepakt repair operations.

the PREPAKT SOLUTION

. . the use of Prepakt methods and materials permitted encasement of these piles without unwatering. After forms were constructed and hoop reinforcement positioned, coarse aggregate was preplaced in the forms. The voids were then pumped full with Intrusion mortar, displacing the water.

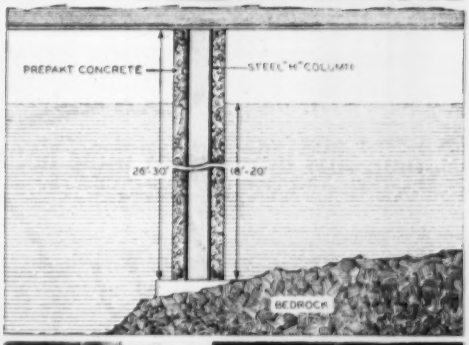
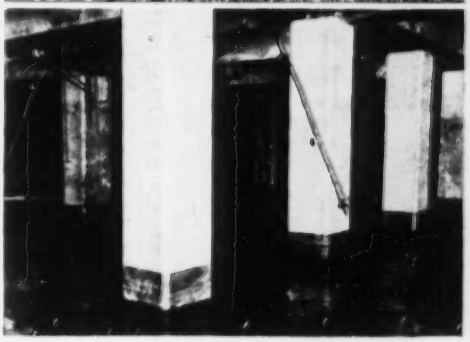


Diagram illustrates how piles were encased by Prepakt techniques.

the RESULT

. . . this Prepakt technique produced high-strength encasement structures permanently bonded to the columns. The dense, impermeable Prepakt Concrete resists the attack of acid wastes and has high weather resistance to cyclic freezing and thawing. Important economies were realized as no cofferdams were required, nor were plant operations interrupted.



After encasement with Prepakt Concrete, piles provide better-than-ever support.

■ This modern Prepakt technique for pile encasement is applicable to all types of piles—timber, concrete and steel. The outstanding advantages of this cost-cutting method make it the best on every count.

Full information on this and other applications of Prepakt methods and materials may be obtained from the Main Office, Cleveland 14, Ohio.

CHICAGO • ATLANTA • BOSTON • DENVER
PHILADELPHIA • SEATTLE • SAN FRANCISCO

ZURICH • PARIS • MADRID • STOCKHOLM
HELSINKI • BERLIN • LONDON • HAVANA

CONTRACTORS PREPAKT ENGINEERS

INTRUSION-PREPAKT, INC.
THE PREPAKT CONCRETE CO.

MAIN OFFICE: CLEVELAND 14, OHIO
CANADIAN OFFICE: TORONTO, ONTARIO

"John, this building of mine holds a cost-cutting *Tip-Off* from ONE BUSINESSMAN TO ANOTHER"

"What is it?" asked John, a prominent appliance manufacturer.

The contractor answered, *"Simply this: don't take your fasteners for granted!*

"An RB&W man showed me how a switch in fasteners could help me make field connections much more economically.

"He suggested switching from rivets to high strength bolts. They cost more than rivets initially, but the assembled cost is much lower. My men work faster than with rivets. The building goes up faster."

You, too, can find a cost-cutting lesson from this story, whether you're in construction* or any other industry.

MORAL: Look to your fasteners for an often overlooked opportunity to reduce costs, and strengthen your competitive position. New inventions, like RB&W's SPIN-LOCK Screw, may prove more efficient than the fasteners you're now using. Or you may save by the stepped-up production you get from using the finest fasteners . . . RB&W bolts, screws, nuts and rivets of uniform accuracy, dependability and physical properties.

Let RB&W help you make the most efficient use of fasteners on your assembly line. Address RB&W at Port Chester.

RB&W—The Complete Quality line. Plants: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices: Philadelphia, Pittsburgh, Detroit, Chicago, Dallas, Oakland. Sales agents: Portland, Seattle. Distributors from coast to coast.

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

*If you're interested in construction, write RB&W at Port Chester for a free reprint of the recent article, "No More Riveting."

RB&W 108 YEARS MAKING STRONG THE THINGS THAT MAKE AMERICA STRONG

wide, radial stiffening beams projecting 2 ft 6 in. above the raft at the center and tapering to a 1-ft, 6-in. depth at the edge. The mast is guyed at the 174-ft point and designed to withstand a wind velocity of 75 mph.

Yugoslav hydro power studied by UN group

Yugoslavia's rivers are being considered for a leading role in the development of electric energy for Europe.

European demands for electric power are rapidly outstripping available supply and the Organization for European Economic Cooperation has called for an increase of 100-billion kwh in European output in the next five years.

Studies made by the United Nations Economic Commission for Europe estimate the hydroelectric capacity of Yugoslav rivers at 50 billion kwh per year. Less than 5% of this capacity is being exploited now.

The main point in developing Yugoslav power is the country's ability to deliver large and regular supplies of electricity in the winter months. Much of the power developed in Italy, Austria, and West Germany comes from Alpine rivers which are blocked in winter by ice and snow. But in Dalmatia, in western Yugoslavia on the Adriatic coast, there are large limestone plateaus with a high winter rainfall that drains away into underground channels. The flow of rivers in this area reaches its peak in winter months, and the fall of the plateau down to the Adriatic Sea provides some "heads" of 2,000 ft within a few miles.

Development of hydroelectric projects in this region would be expensive. Transmission lines 250 miles long would have to be built to carry the power to the northern borders of Yugoslavia for European usage.

Moselle canalization

France, West Germany and Luxembourg are considering a $100-million project for development of the Moselle River over a 150-mile stretch between Thionville, France, and Coblenz, Germany.

Under the project a total of 13 dams would be built to provide electric power for local use, and the river would be opened to navigation, providing an economical water route over which iron ore from Lorraine and coal from the Saar could move to the Rhine at Coblenz and thence to Atlantic ports.

Manufacturers of
Reliable Pile Driving Hammers

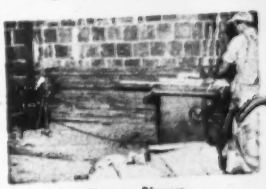
1852 1953

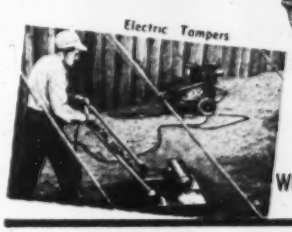
and Pile Extractors

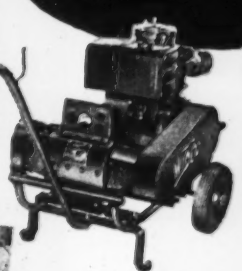
Manufacturers of Pile Driving Hammers and Pile Extractors
VULCAN IRON WORKS • 329 NORTH BELL AVENUE • CHICAGO 12, ILL.

CUT COSTS
SAVE TIME with . . . . . Economy-Engineered WINCO ENGINE GENERATORS

Cut Off and Chain Saws


Electric Planers

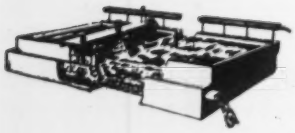

Electric Tampers



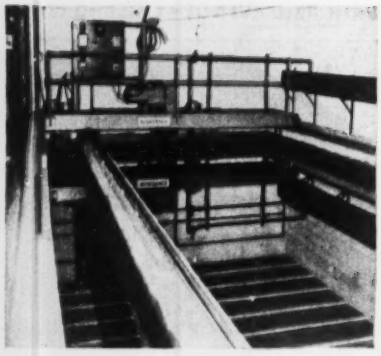
MODEL 4500 — 2500 Watts A.C. on "Speedy-Skid" Portable base. Other models 500 Watts to 10 KW. Prices start at $214.00. Write for details.

Why burden your costs by using hand tools on jobs away from accessible power? WINCO portable Economy Engineered Generators supply ample power for cost-cutting electric saws, drills, planers, routers, tampers, pipe threaders — and lights, too! Low-cost construction demands portable electric power — WINCO Generators provide it efficiently and economically for every job!

WINCHARGER CORPORATION, 2173 E. 7th St., Sioux City, Iowa
A wholly owned subsidiary of Zenith Radio Corporation



investigate the
AUTOMATIC BACKWASH RAPID SAND FILTER



The Hardinge "ABW" Sand Filter cleans itself, automatically, without shut-downs or change-over. Primarily adapted to the filtering of water containing small amounts of suspended particles that cannot be properly collected in settling basins or clarifiers. Used for filtering municipal water supplies, industrial water supplies, sewage plant effluents, and certain pre-settled industrial waste waters to permit their re-use. Bulletin 46-A-55.

HARDINGE
COMPANY, INCORPORATED
YORK, PENNSYLVANIA · 240 Arch St. · Main Office and Works
New York · Toronto · Chicago · Hibbing · Houston · Salt Lake City · San Francisco

Cordon of Oregon: Key man in federal public works policy

The movement of the deeply cut Interior Department Appropriations Bill from committees to the Senate floor focuses the spotlight on an unobtrusive senator, hardly known outside his state, who today is perhaps the best posted and most influential member of Conress in the field of natural resources—Sen. Guy Cordon from the state of Oregon.

As chairman of the Senate Appropriations Subcommittee for Interior, Senator Cordon had the biggest say on how much of the House's $201-million cut in Interior funds stayed cut and what will be put back.

His influence, however, doesn't stop there. He's the third ranking Republican on the Interior committee and so far this year has chairmanned its two major hearings. As chairman of the Subcommittee on Territories and Insular Affairs, he presided over the Hawaiian statehood hearings, and because of his legal grasp of the technical issues involved in the so-called tidelands hearings, he was drafted to preside over those hearings and manage the bill on the floor.

And his critics take pains to point out that he is not without influence at the Department of Interior, where the present Secretary, Douglas McKay, comes from Cordon's home state of Oregon. This latter fact they regard as no coincidence. They see in the Cordon-McKay relationship a prelude to much closer harmony between the department and Capitol Hill. And some go so far as to suggest that in any ensuing duets, Cordon likely will carry the tune with McKay doing most of the harmonizing.

Wide World Photo
SENATOR GUY CORDON

Cordon, who is one of the most unpretentious and self-effacing members of the Senate, discounts talk of his influence at Interior. He bemoans the fact that because he is one of the few Republican senators from the Pacific Northwest everybody from out there who wants a job at the Interior Department from assistant secretary on down to doorkeeper makes a beeline for his office. The few qualified persons who turn up are sent on to Interior with a recommendation, but the remainder of the job-hunters and favor-seekers just mean more work and headaches for Cordon and his staff. He talks to McKay by phone from time to time but their heavy work load has prevented their seeing each other except during official functions.

• **Key man**—To get a picture of what shifts in policy or emphasis are in the making under the Republican Administration in the field of reclamation and public works, one could hardly do better than probe the thinking of the sharp-featured, homespun Westerner, whose cracker-barrel manner belies his keen grasp of legal issues and particularly Western matters.

Cordon parts company with the Republicans who regard all programs as administered by the Democrats as inherently evil and therefore ripe for the scrap heap. Cordon views reclamation, for instance, as a bipartisan undertaking. He finds fault with the way the program was administered under the Democrats, but he joins liberal Democrats like Sen. Warren Magnuson from his neighboring state of Washington in the belief that the bulk of the power development of the Pacific Northwest must be financed by the government—that it's just too large an issue to be handled by private financing.

He differs with Magnuson, however, on how far the federal government should go. For instance, he would be for a cooperative arrangement on multi-purpose dams that would call

All in a day's work...

with a BERGER CONVERTIBLE TRANSIT-LEVEL

Joseph Anemon of A. Lowe Co. on the job

"We keep our Berger Convertible busy on all kinds of construction—from the ground up," says Frank Murphy, Project Director of A. Lowe Co., Building Contractors, Newark, N.J.

"One day you'll see it at work laying out a new factory site, marking batter boards, checking elevations for excavating and grading. Or it's measuring elevation of concrete piers for the steel columns of an office building, setting lintels, aligning and plumbing structural steel. On another job, we'll have it picking up elevations for finished floors, measuring hung ceiling heights, setting door bucks, and checking all other stages of construction."

That's the kind of a "good day's work" you can expect from a Berger Convertible Transit-Level because it's built for builders... designed to be consistently accurate, simple to set up for quick readings, easy to level up, rigid and sturdy enough to take the bumps in the field and stay on the job without time lost for repair.

The table below shows some of the reasons why—compares the Berger with the other two leading instruments. Note the bronze and brass construction—the materials used in fine engineers' transits. Note the plate level... the 60 second sensitivity of its telescope level vial. They prove the accuracy with which the Berger is made. ***See why it's considered the best buy at any price!***

Before buying a Convertible... *Compare!*

	Berger Convertible	Convertible No. 1*	Convertible No. 2**
TELESCOPE	24-26 power 34 mm. clear aperture bronze vial sensitivity 60 sec.	less 30 mm. clear aperture fabricated vial sensitivity 90 sec.	less 33 mm. clear aperture zinc die cast vial sensitivity 120 sec.
OPTICS	Coated	Coated	Coated
FOOT PLATE	Brass Trivet integral	Aluminum Trivet integral	Brass Trivet points separate
HORIZONTAL CIRCLE	Forged Brass	Aluminum	Brass
YOKE FRAME	Bronze	Aluminum	Zinc
TANGENT PIECE	Brass	Aluminum	Integral with clamp
TELESCOPE CLAMP	Brass	Aluminum	Zinc
PLATE LEVEL	Yes	No	No
CASE	Mahogany transit case	Level type box	Level type box
STRAP	Padded leather handle	Plain leather	Plain leather

**Retails higher than Berger*
***Retails lower than Berger*

Take a Berger into the field—see its accuracy in action. Write for literature on this and other Berger Instruments—12" Dumpy Level, Service Transit-Level and Hand Level. And ask about our Engineers' Instruments.

C. L. Berger & Sons, Inc., 37 Williams St., Boston 19, Mass.
342 Madison Ave., N. Y. 17, N. Y.

Engineers' Transits
Levels
Alidades
Theodolites
Builders' Instruments

THE BEST IN ~~SIGHT~~ IS BERGER

ENGINEERING AND SURVEYING INSTRUMENTS... SINCE 1871

HOW FORWARD-LOOKING COMPANIES

Make Costly Machines Earn More Dollars-Per-Hour!

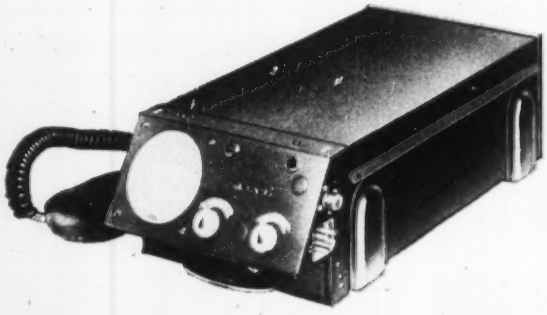
MOTOROLA 2-WAY RADIO

cuts "down time" and "deadheading" —makes each day's operations more profitable with maximum use of equipment

Progressive companies are using Motorola 2-way radio to get greater day-by-day returns from their investment in equipment. Instant Motorola communications co-ordinates operations, reduces lost time, helps meet construction deadlines . . . reduces "deadheading." Costly breakdowns are reported in seconds. Improved efficiency of every piece of equipment pays for Motorola installations over and over again.

Eight exclusive Motorola features guarantee precision selectivity, time-tested durability, obsolescence-free design. Permakay, Motorola's permanent selectivity wave filter, eliminates 15 nuisance tuning adjustments forever. Get all the facts about this rugged, reliable communications tool. *Write to Dept. 2286-EN today!*

Construction foreman, operating base station console, maintains instant supervision, keeps progress report up to date, co-ordinates activities between crews.



Uni-Channel Sensicon Dispatcher serves as a fixed or mobile station. It's ruggedly built to take jolts and shocks of rough roads . . . obsolescence-proof circuits stay up to date for years to come.

2-way Radio

Motorola

Communications & Electronics, Inc.

A SUBSIDIARY OF MOTOROLA INC.

800 N. Kilbourn Ave., Chicago 51, Illinois • Rogers Majestic Electronics Ltd., Toronto, Canada

for non-public bodies building the generating facilities and the federal government the non-reimbursable features. It's more a difference in degree than in basic philosophy, and this distinguishes him from the Republican coterie which wants to get the government out of all operations that might be construed as competitive with private enterprise.

At charges that the recent passage of the submerged oil lands bill will trigger the biggest natural resources grab in history, Cordon merely grins a crooked grin and shifts the ever present cigar in the corner of his mouth to an even jauntier angle. He concedes that the sharp slowing down of the reclamation and public works programs under the new Administration may give some public-spirited people cause for alarm. But as he views it, it is a natural phenomenon that goes with a change in administration.

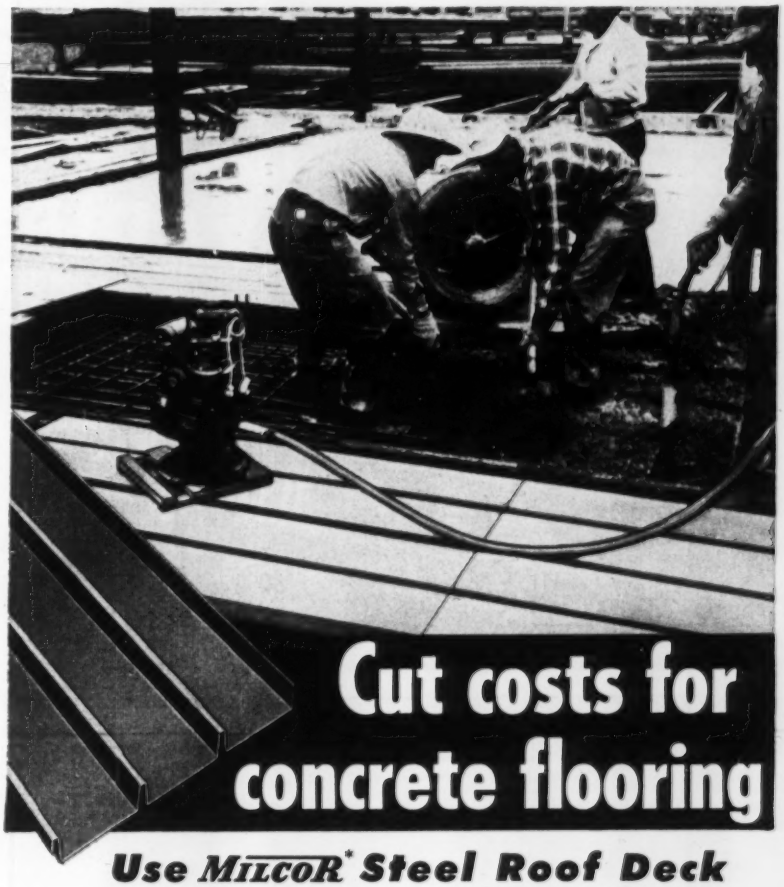
"We are engaged in a review and re-examination of the execution of policies now in effect by existing statutes," he explains in the precise and methodical language of a lawyer. "This means a temporary cessation out in the field . . . on construction of reclamation and public works projects in order that the program can be re-avaluated both as to cost and as to necessity."

• **No alarm**—He hastens to add that this is no cause for alarm. "This year we'll show reductions in many fields that will be greater than desirable after we've completed the re-examination. We may cut out more transmission lines than we should and we'll halt some construction early stages. But when we've finished this examination, the public will find that the government still is in the business of building multi-purpose projects, reclaiming arid land, stringing transmission lines, and preventing flood damage."

While this scrutiny of the program is going on, projects under way will be continued, says Cordon, so that the government may realize a return on its investment. When stops are made in construction. They will be ordered during the early stages of work in order that savings actually can be effected.

Cordon thinks that it may take legislative action to halt some of what he considers the objectionable reclamation practices of the past administration.

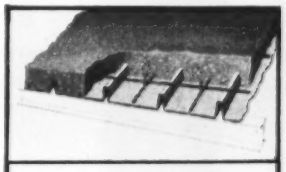
But he doesn't anticipate any prospects for congressional action this session—unless Congress should return in the fall after a recess. He thinks a lot of the practices that have



Cut costs for concrete flooring

Use MILCOR* Steel Roof Deck for permanent floor forms

When inverted, Milcor Roof Deck becomes a permanent floor form for concrete slabs.



To provide permanent floor forms, Milcor Steel Roof Deck is laid inverted over structural members — ribs upward, smooth surface down —easily nested and lapped, then welded in place.

- You save the time and labor it takes to build and tear down wood forms.
- You eliminate most shoring, and obstruction to other trades during construction operation.
- You provide an immediate platform and protective staging for tradesmen to work on.
- You cut clean-up costs; interlocking deck prevents concrete dripping and seepage.

Wherever plastered ceilings are not required, the smooth steel deck surface forms an attractive, economical ceiling.

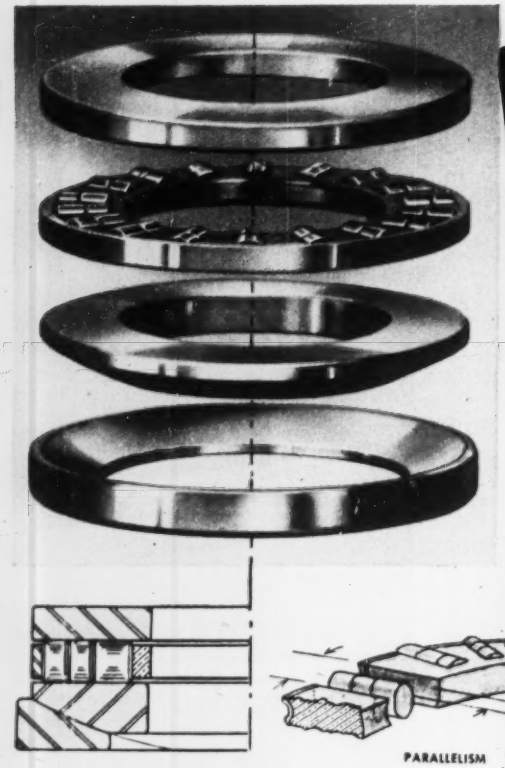
Use Milcor Roof Deck as permanent floor forms and enjoy all these advantages. Our Milcor Manual contains complete information. Write for your copy today.

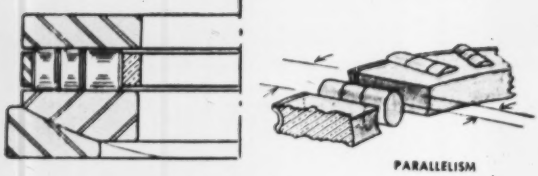
*Reg. U. S. Pat. Off. M-120

INLAND STEEL PRODUCTS COMPANY

4057 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

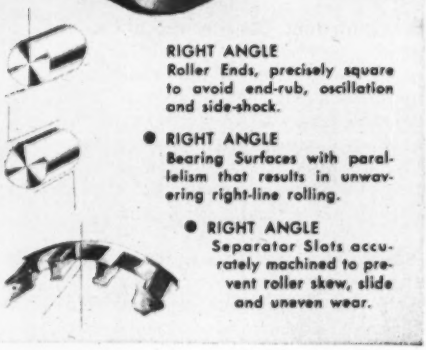
BALTIMORE 24, MD. — 5300 Pulaski Highway • BUFFALO 11, N. Y. — 64 Rapin St. • CHICAGO 9, ILL.—4301 S. Western Blvd. • CINCINNATI 25, OHIO—3240 Spring Grove Ave. • CLEVELAND 14, OHIO — 1541 E. 38th St. • DETROIT 2, MICH. — 690 Amsterdam Ave. • KANSAS CITY 41, MO. — P. O. Box 918 • LOS ANGELES 58, CALIF. — 4807 E. 49th St. • NEW YORK 17, N. Y. — 230 Park Ave. • ST. LOUIS 10, MO. — 4215 Clayton Ave.





ACCURATE PARALLELISM between the rollers and the matched thrust plates is repeated in the parallelism between the separator slots and the rollers themselves—all adding up to quietness, equalized wear and longer life.

THRUST RADIAL



RIGHT ANGLE
Roller Ends, precisely square to avoid end-rub, oscillation and side-shock.

- **RIGHT ANGLE**
  Bearing Surfaces with parallelism that results in unwavering right-line rolling.
- **RIGHT ANGLE**
  Separator Slots accurately machined to prevent roller skew, slide and uneven wear.

Held to extremely close limits of parallelism, every roller—every race—every thrust plate in a Rollway Bearing is an engineering masterpiece of matched precision and right-angle trueness. As a result, friction losses are low—load capacity and service life high.

Rollway Radial and Thrust Bearings offer the widest selection in types and sizes, available for quick replacement through authorized distributors. Consult your classified phone directory under BEARINGS.

Our engineers are available without cost or obligation to assist you in selecting the correct Rollway Bearing for your needs. Call your nearest Rollway sales office.

SALES OFFICES

Syracuse	Houston
Cleveland	Chicago
Detroit	Philadelphia
Boston	Toronto
Pittsburgh	Los Angeles

ROLLWAY BEARINGS

Complete Line of Radial and Thrust Cylindrical Roller Bearings

drawn criticism can be corrected administratively.

Here is Cordon's thinking on the controversial reclamation issues, together with his appraisal of chances for congressional action:

Public preference clause—He sees little likelihood of changing the preference for non-profit public bodies and cooperatives on public power projects since it has a legislative history dating back to passage of the Reclamation Act in 1906 under President Theodore Roosevelt. But he does believe that a "sound interpretation" by the Administration would lessen the objections to use of the preference clause, which, for instance, doesn't provide the Reclamation Bureau with a mandate to find public bodies to take all the output from federally generated power projects.

Interest component—He hopes that under the new Administration the practice of diverting the interest component from power revenues to make feasible irrigation projects will become "dead as a dodo." Cordon feels that if the Reclamation Bureau does not repeal the solicitor's opinion that authorized the diversion of the interest component, then Congress may be forced to act. He doesn't object so much to use of the interest component in subsidizing irrigation projects, so long as the bureau makes it plain that is what is being done. It is the attempt to disguise it that riles Cordon. He thinks in some instances there is justification in diverting power revenue for worthwhile irrigation projects, but he would prefer to see the power rate increased so as to provide the necessary funds for the subsidy, rather than to divert the interest component from the Treasury.

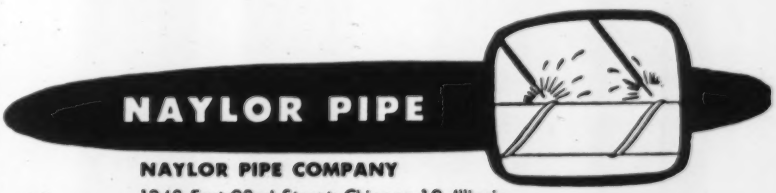
Feasibility authorization—Cordon favors the move in the House to strip the Secretary of the Interior of his Congress-granted power to authorize reclamation projects on findings of engineering feasibility: "I would support a requirement for congressional authority in cases where complete reimbursement is impossible." According to most students of the West, that would cover virtually all unreclaimed western land today.

Transmission lines—Cordon parts company with his GOP counterpart in the House—Rep. Ben Jensen of Iowa, chairman of Interior Appropriations Subcommittee—on getting the government out of the business of erecting transmission lines. Cordon thinks that in areas like the Pacific Northwest where the pattern of federal construction of all phases of power is set, that the government must re-

FULL STREAM *Ahead!*

Through this line of NAYLOR lightweight pipe, dredging operations are deepening a river channel. It's just one of the many ways in which this distinctive pipe is serving contractors throughout the world today.

Write for Bulletin No. 507



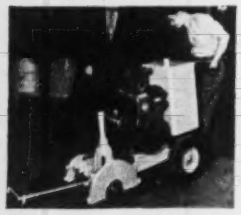
NAYLOR PIPE COMPANY
1248 East 92nd Street, Chicago 19, Illinois
New York Office: 350 Madison Avenue, New York 17, New York

New Savings In . . .
CONSTRUCTION and MAINTENANCE

Contractors . . . Highway Officials . . . All Say . . .
"CONTRACTION JOINT SAWING IS A MUST!"

Wedge-type cut eliminates spalling and settling in highway repair and underground services.

Cutting provides superior contraction joints at lower cost . . . permits laying concrete in long sections without interruption.

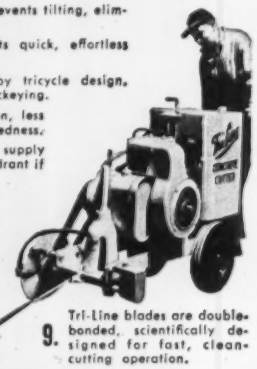


Floor cutting in industry for machine installation.

- Provides smoother-riding, better appearing surface.
- Reduces quantity of sealing compound used up to 65%.
- Completely eliminates joint spalling and deterioration.
- Permits better sequence of paving operations, at lower cost.
- Inhibits water infiltration and prevents sub-base erosion.
- Makes possible earlier application of curing compounds.

Only Tri-Line Gives All These Advantages!

1. Exclusive three-wheel undercarriage prevents tilting, eliminates blade bind and excessive wear.
2. Direct-acting hydraulic control permits quick, effortless depth-of-cut adjustments.
3. Maximum maneuverability afforded by tricycle design. Turns within its own length without jockeying.
4. Sturdy construction means less vibration, less blade wear. A full 700 pounds of ruggedness.
5. Thirty-gallon tank provides water when supply is inconvenient. Can be attached to hydrant if desired.
6. Vital engine parts protected from blade spray. No shut-downs due to engine "drowning."
7. Abundant power from the 13 h.p., two-cylinder Wisconsin air-cooled engine for full-depth, full-speed cutting.
8. Double-ended arbor permits cutting on either side of the machine . . . in places normally inaccessible.
9. Tri-Line blades are double-bonded, scientifically designed for fast, clean-cutting operation.

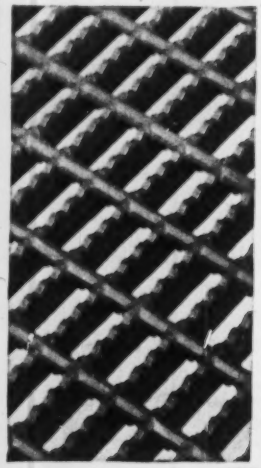


WRITE FOR FREE BROCHURE

Manufactured By
Tri-Line CO.
973 Carroll St. • Racine, Wis.

SLIP-PROOF in All Types of weather

GARY SERRATED GRATING



Here is another GARY Specialized Welded Grating type that is especially adaptable for area gratings in sidewalks. Other uses for this durable and neat appearing grating are places where good traction is an important consideration and for inclined walkways.

Gary Serrated Grating is available in all types of Gary welded Grating in either GW or SGW series with cross bars spaced on 2" or 4" centers.

Send for illustrated Booklet No. 14-p-21

This booklet pictures and describes the complete line of GARY GRATINGS. Included is two pages of engineering data. Two pages are devoted to our Fastening Devices for Anchoring Grating to supports. Our 5 types are illustrated and diagrammatic drawings are shown.

GARY-GRATING
GARY-STAIR TREADS
GARY-IRVING DECKING

• Representatives in all principal cities. Consult your telephone directory.

STANDARD STEEL SPRING COMPANY
OPEN STEEL FLOOR GRATING DIVISION
4001 EAST 7th AVENUE
GARY, INDIANA

main in the business of erecting transmission lines. Elsewhere, where the pattern may be different, he might favor turning the job over to the utilities. But he pleads not guilty to the charge of the liberals that the present Administration wants to turn over all federally generated power to the public utilities at the bus bar. In the end, Cordon is apt to win out over the Republicans who join with Jensen in wanting to get government out of as much of the power business as possible.

New projects—Cordon is against voting money for any new projects, but will continue the ones that are well along. He doesn't rule out new authorizations this session, but makes it plain there won't be any money for them this year.

Careers . . .

• **Appointed—Leo M. Buhr,** who has been construction branch chief of the North Pacific Division, Corps of Engineers, has become chief of the engineering and construction division of the Atomic Energy Commission of the Portsmouth (Ohio) area. . . . **F. C. Woermann** has become board chairman of Woermann Construction Co., St. Louis, and is being succeeded as president by **R. E. Salveter.** . . . **Oscar J. Ellertson** has succeeded **Melvin Ovestrud** as president of Pioneer Engineering Works, Inc. . . . **Stanley J. Johnson** has shifted from the Corps of Engineers Waterways Experiment Station at Vicksburg to become chief engineer of Greer & McClelland, consulting foundation engineers of Houston, Tex.

• **Local government appointments—James K. Carr,** consultant to the subcommittee on irrigation and reclamation of the House Interior Committee, is becoming consulting engineer for the Sacramento municipal utility district. . . . **Arthur H. Herberger,** former director of the Division of Sanitation, Nassau County (N. Y.) Health Department, has become town engineer of Hempstead, N. Y.

• **Elected—Mark A Princi** has been elected president of the Engineering Societies of New England, Inc. . . . **John P. Riley** has been elected president of the Metropolitan Section of the American Society of Civil Engineers. **Philip C. Rutledge** and **William J. Shea** were elected vice-president and treasurer. . . . **Brig. Gen. Dwight F. Johns,** CE (Ret), has been elected national president of the Society of American Military Engineers.

INTRODUCING

THE NEW

BARBER-GREENE MODEL 705-B

Runabout SERVICE DITCHER

trademark registered at U. S. Patent Office

Now... greater efficiency for lowest cost per foot of trench than ever before!

Here is the new Barber-Greene Model 705-B Runabout . . . successor to the famous B-G service ditchers that have set the standards of performance in the ditching field. Three major 705-B design features are:

1. ***New Fluid Drive.*** **Eliminates shock loads. Requires no overload devices of any kind. Gives operator new control of applied power.**
2. ***New Curved, Reversible, Insert Digging Teeth.*** **Give 3 to 5 times longer tooth life.**
3. ***New Automatic Counterbalance Valve.*** **Automatically maintains constant crowding speed when digging down grade.**

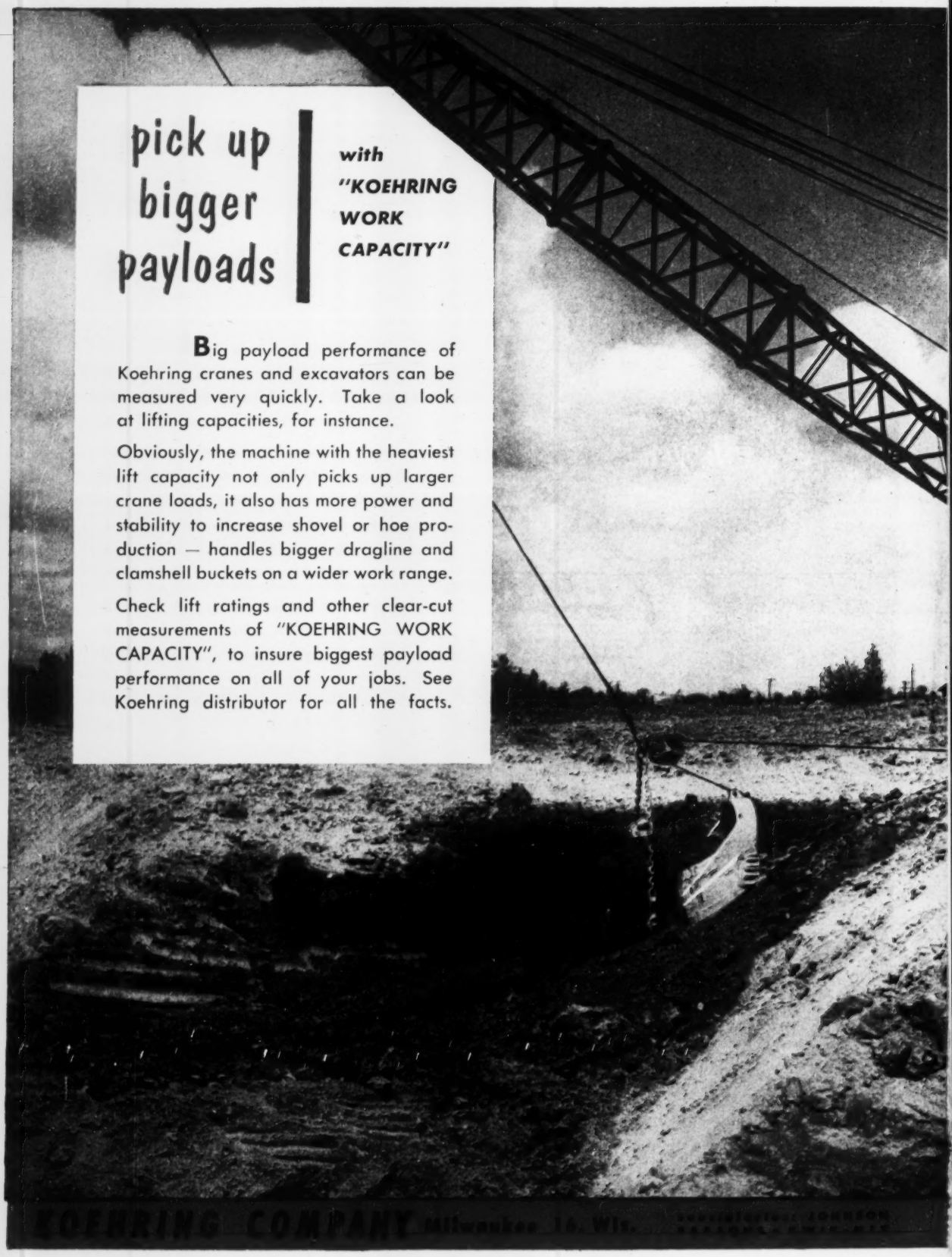
These, plus other design advancements, are in addition to proven Runabout advantages such as the exclusive Hydra-Crowd with its infinite range of crowding speeds, independent of bucket-line speeds; control from ground or cab; instant crowding, stop and reverse; fast road travel; vertical boom, ready to dig on arrival, leaves no ramp; special differential for better traction on slippery surfaces; hydraulic hoist for finger-tip operation of boom.

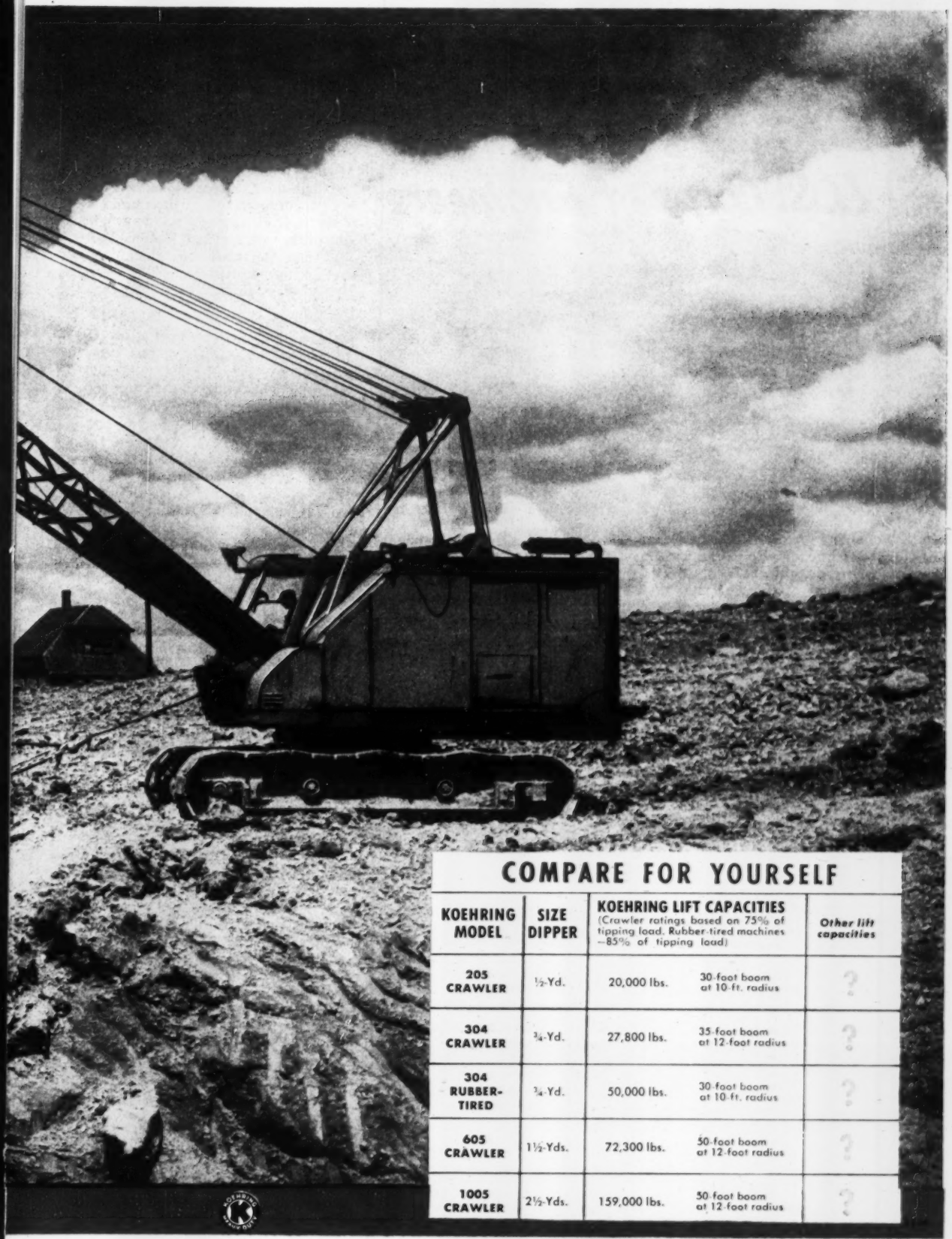
53-18-D

Barber-Greene

BG

Aurora, Illinois, U. S. A.


pick up bigger payloads
with "KOEHRING WORK CAPACITY"
Big payload performance of Koehring cranes and excavators can be measured very quickly. Take a look at lifting capacities, for instance.
Obviously, the machine with the heaviest lift capacity not only picks up larger crane loads, it also has more power and stability to increase shovel or hoe production — handles bigger dragline and clamshell buckets on a wider work range.
Check lift ratings and other clear-cut measurements of "KOEHRING WORK CAPACITY", to insure biggest payload performance on all of your jobs. See Koehring distributor for all the facts.
KOEHRING COMPANY Milwaukee 16, Wis.



COMPARE FOR YOURSELF

KOEHRING MODEL	SIZE DIPPER	KOEHRING LIFT CAPACITIES (Crawler ratings based on 75% of tipping load. Rubber-tired machines —85% of tipping load)		*Other lift capacities*
205 CRAWLER	½-Yd.	20,000 lbs.	30-foot boom at 10-ft. radius	?
304 CRAWLER	¾-Yd.	27,800 lbs.	35-foot boom at 12-foot radius	?
304 RUBBER-TIRED	¾-Yd.	50,000 lbs.	30-foot boom at 10-ft. radius	?
605 CRAWLER	1½-Yds.	72,300 lbs.	50-foot boom at 12-foot radius	?
1005 CRAWLER	2½-Yds.	159,000 lbs.	50-foot boom at 12-foot radius	?

HOW FRANKI FOUNDATION COMPANY Saved $7,500 For U.S. Corps of Engineers

Warehouse, U. S. Corps of Engineers, Tobyhanna, Pa.; Architect—Gilboy, O'Malley & Stopper, Wilkes-Barre, Pa.; Consulting Engineer — Axel Schulze, Phila., Pa.; Contractor — Consolidated Construction Co., Woodbury, N. J. The picture above shows one of the two identical buildings constructed, each 200 feet wide by 1,000 feet long.

• • •

Due to the presence of boulders, very hard driving was anticipated on this job. After comparing Franki Pressure Injected Spread Footings with conventional foundation systems, the contractor was convinced the Franki method would save time and materials.

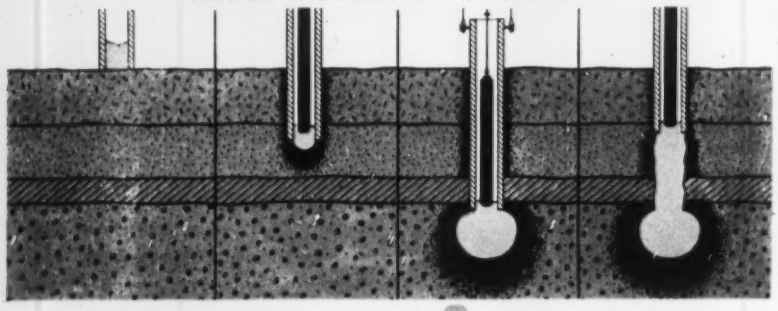
435 caissons with a working load of 60 tons each and 13 feet in length were driven. On a load test of 120 tons there was no settlement at all. Result — $7,500 saved on this job.

In open competition with conventional foundation systems — on projects ranging from blast furnaces to multi-floor office buildings — Franki Pressure Injected Spread Footings are selected for safety and economy.

• • • LIGHTEN YOUR COSTS . . . INCREASE YOUR LOAD! • • •

Send for "Franki Facts" for complete information about the U. S. Corps of Engineers project—and an illustrated booklet describing the Franki Foundation method in complete detail. Write Franki Foundation Company, 114 East 40th St., New York.

FRANKI INSTALLATION PROCEDURE



FRANKI
FOUNDATION COMPANY

PHILADELPHIA, PA.
PITTSBURGH, PA.
NEW YORK, N. Y.

FIRM FOUNDATIONS FOR OVER FORTY YEARS

OBITUARIES

James D. Moffat, 68, civil engineer and retired chief engineer of the Pennsylvania Railroad's western region, died May 18 in St. Petersburg, Fla. His home was in La Grange, Ill. After graduating from Washington and Jefferson College, Moffat worked as an engineer on construction projects of the Indiana Interurban System. He joined the Pennsylvania Railroad in 1907 and was appointed chief engineer of the western region in 1943. He had active interest in the elevation of tracks in Chicago.

Edward E. Minor, 77, civil engineer, died in New Haven, Conn., May 14. He was a graduate of Sheffield Scientific School. From 1896 to 1909 he was with A. B. Hill, civil engineer, head of the city engineering department. In 1910, he started with the New Haven Water Co. as an engineer and became general manager. In 1916 he went with the Milford Water Co. as superintendent and became vice-president and general manager in 1937. He had charge of the construction of the large Gaillard and Menunkatuc reservoirs in North Branford, Conn.

Waldo E. Clarke, 71, engineer-secretary of the Connecticut Commission of Steamship Terminals, died in New London May 16. He received his civil engineering degree from New York University in 1906. He went to New London in 1908 as city engineer after serving two years with the former New York State Water Commission. Later he went to the Panama Canal Zone with the United Fruit Co. as a civil engineer. He left there after four years and returned to New London to supervise construction of the State Pier. On its completion in 1917, he was named superintendent.

Dwight D. Guilfoil, 66, vice-president and general sales manager of Sauerman Bros., Inc., died in Chicago on May 3. He had been with the company since 1913, except during World War I, when he served with the 108th Engineers in France. He had been active in the affairs of the manufacturers' divisions of the National Sand and Gravel Association, the Associated Equipment Distributors, and other trade associations.

Benjamin A. Loveland, 78, retired civil engineer who had been associated with the construction of the Sumner traffic tunnel at Boston and the Cape Cod Canal as supervising engineer, died at

THE RUGGED 225 H.P. ENGINES in these big GMC DW980-67 Diesel tractors deliver unmatched *two-way* performance: smooth hustle over the road and extra-husky pull for off the highway work. Their low-cost operation puts more profit into every ton-mile they move.

Moving mountains, molehills— and anything in between

GMC's GREAT NEW W450-30 SIX-WHEELER packs 145 horsepower—topping everything else in the 26,000 GVW class. This fast-stepping hauler is available in five wheelbase lengths from 149 to 197 inches for use with medium dump, concrete mixer or general purpose bodies.

WHETHER you haul 5 yards a trip—or 25—it will pay you to look over GMC's line of extra-rugged six-wheelers. Only GMC today offers you a choice of 10 great models blanketing the entire 26,000 GVW-100,000 GCW field.

You'll choose from GMC power that starts with the spectacular 145 h.p. gasoline-driven "302"—used in Army trucks that roll 10,000 lb. loads up grades too steep for humans to walk. And at the top of the range, you'll find a cost-slashing 225 h.p. *2-cycle* Diesel engine—now easier-starting and longer-lived than ever before.

What's more, through a tandem drive axle, this power puts its shoulder to four—not just two—drive wheels to *double* your traction—distribute the weight. You'll wrestle capacity loads through sand and muck that would swamp a truck with a single rear axle. These GMC's defy years of brutal going, off the highway, over the road—or the most battering combination of both.

Now you can say good-bye to trucks that strain away their life on jobs too big—or squander your fuel and oil on jobs too small!

You'll find a six-wheeler made to order for *your* job at your GMC dealer's. See it—and check over all the extra-value features that mean longer life and more dependable service in a GMC.

GMC TRUCKS

GMC Truck & Coach Division of General Motors

A General Motors Value *Your key to greater hauling profits*

"Engineers Rate the COPYFLEX 93 as the Top Whiteprinter..."

says *Dana H. Bennett*
Bruning Drafting Room Specialist

"Yes, wherever I've sold a COPYFLEX 93 — and I've sold plenty of them—engineers and draftsmen tell me there's nothing like it for speeding prints.

"They find it the finest heavy-volume whiteprinter available. And they like its continuous high-speed production of top quality, dry, ready-to-use prints from either sheets or roll stock. Its vacuum feed permits easy insertion of curled originals.

"On top of this, the '93' needs no expensive ventilation or plumbing."

From prints to pencils, Bruning-trained men like Mr. Bennett can fill every drafting requirement.

You receive "in-person" attention to your needs and fast service on all kinds of drafting room equipment to help you turn out better work in less time at lower cost. Send coupon today for more facts and figures on Copyflex.

From Pencil to Print, only BRUNING has everything

COPYFLEX Whiteprinters
Drafting Machines
Tracing Papers and Cloths
Surveying Equipment
Drafting Furniture
Drawing Instruments
Sensitized Papers, Cloths, Films
Electric Erasers
Complete Line of Drafting Supplies and Equipment

MODEL 93 COPYFLEX 8-3-4

CHARLES BRUNING COMPANY, INC., Dept. G63
4700 Montrose Ave., Chicago 41, Ill.
☐ Please have a Drafting Room Specialist call.
☐ Send me free booklets on COPYFLEX.
☐ Show me COPYFLEX in action (no obligation).

Name.....Title.....
Company.....
Street.....
City.....Zone....State.....

OFFICES IN PRINCIPAL CITIES

BRUNING
Everything for the Engineer and Draftsman

OBITUARIES

Medford, Mass., May 8. For a time he was with the Boston Transit Commission.

Alexander Majors Munn, 85, a civil engineer, died May 4 in Newport, Del. Before going to Newport 22 years ago, Mr. Munn owned the Munn Construction Co. in the Middle West for 30 years, specializing in reclamation work in the Missouri and Mississippi River valleys. He was a graduate of the University of Illinois.

Alexander J. McKenzie, 43, co-owner of the McKenzie-Crawford Construction Co., a San Francisco Bay area firm, died May 3. He was president of the Home Builders Assn. of San Mateo County. His home was in Saratoga, Calif.

William A. Walker, 72, a building contractor in Buffalo, N. Y., for 25 years, died May 7. For the last ten years he had been a construction superintendent for various companies.

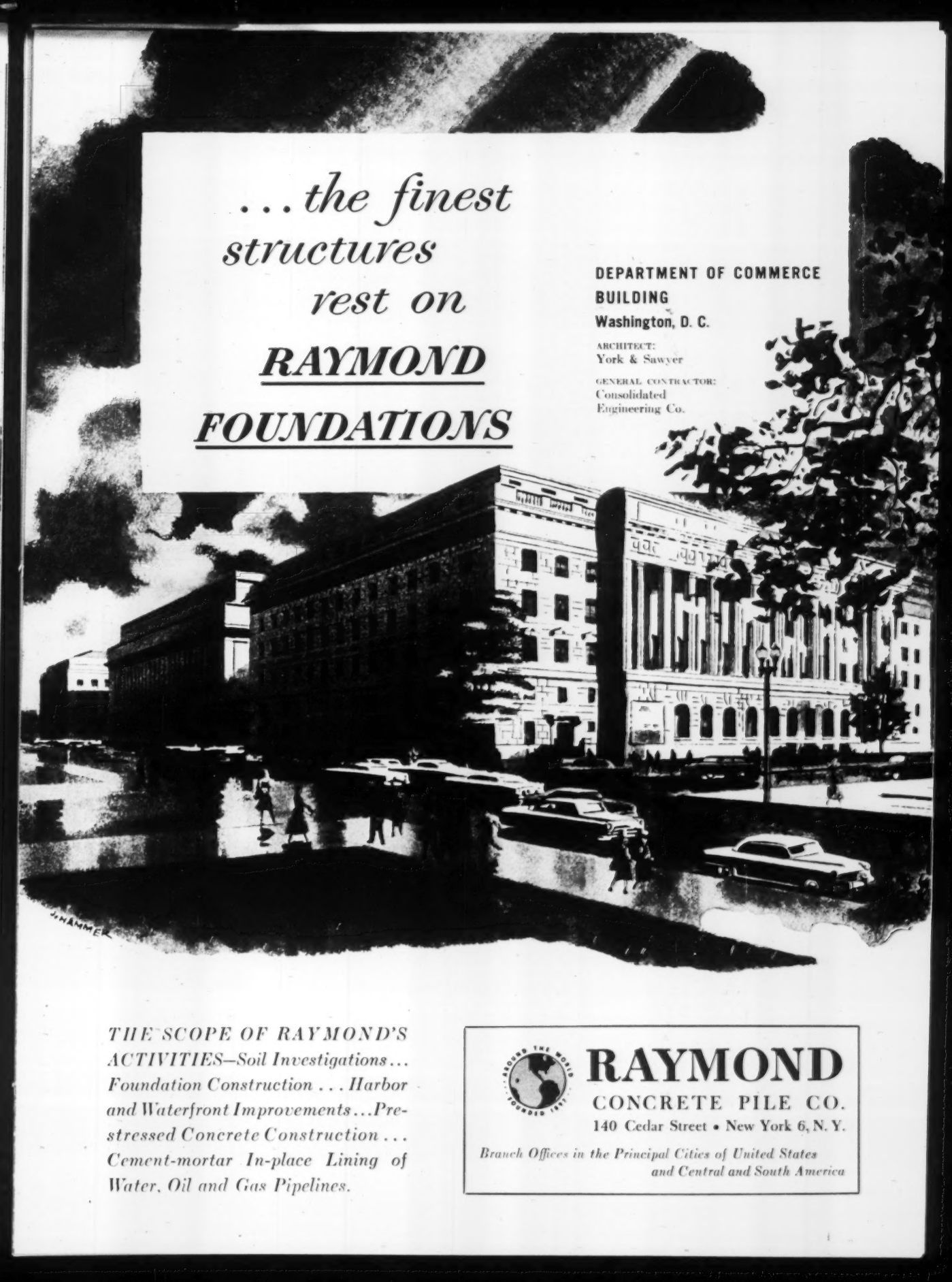
Hurley H. Cox, 48, president of Hawkins & Cox, Inc., steel erecting concern of Roanoke, Va., was killed recently by a fall on a job he was erecting for the West Virginia Pulp & Paper Co. at Covington, Va.

Richard A. Davies, 79, retired civil engineer of Seattle, died there May 6. He had been with the Corps of Engineers almost 40 years.

Ray W. Heslop, 56, whose firms built more than 4,000 homes in Akron, Ohio, and vicinity, died May 12.

Edward Nathaniel Torbert, 50, former regional planning engineer for the Bureau of Reclamation at Boise, Idaho, died May 1 in Karachi, Pakistan. Torbert, who served on the president's Water Policy Commission in Washington, D. C., in 1950, was at Girishk, Afghanistan, where he had served two and a half months as field coordinator, Point Four, on the Helmand Valley Irrigation Project. He had left Boise in February to assist in planning irrigation for the multi-purpose project in Afghanistan. He was graduated from Dartmouth College in 1925, M.S. from the University of Chicago in 1927 and Ph.D. in 1931. He was an instructor at Dartmouth from 1927 to 1929 and an assistant professor at San Jose, Calif., State College from 1931 to 1935. He was geographer for the Tennessee Valley Authority, 1935-1938 and for the Pacific Northwest Planning Commission

(*Continued on page 92*)



THE SCOPE OF RAYMOND'S ACTIVITIES—Soil Investigations... Foundation Construction . . . Harbor and Waterfront Improvements...Prestressed Concrete Construction . . . Cement-mortar In-place Lining of Water, Oil and Gas Pipelines.

RAYMOND
CONCRETE PILE CO.
140 Cedar Street • New York 6, N. Y.

Branch Offices in the Principal Cities of United States and Central and South America

Dozens of Uses • Thousands of Users

Prove Ability, Versatility of the Model D

40 Brake hp. • 8,800 lb. (bare)
Four speeds forward to 25.6 mph., reverse to 3.3 mph.

The thousands of satisfied owners are still finding new uses for the able and versatile Allis-Chalmers Model D Grader. It has proved again and again that it has the power and capacity to do outstanding work on both construction and maintenance.

Usefulness of the Model D is multiplied by several easily mounted attachments: hydraulically controlled rear-end loader, shoulder maintainer that is interchangeable with the loader, scarifier, both V-type and blade snowplows.

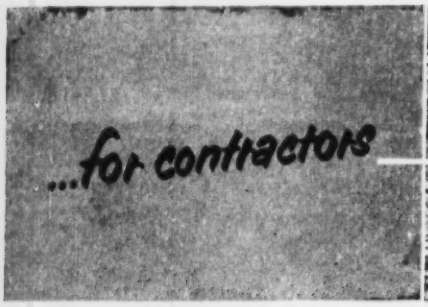
MORE POWER, NEW FEATURES, LOW COST

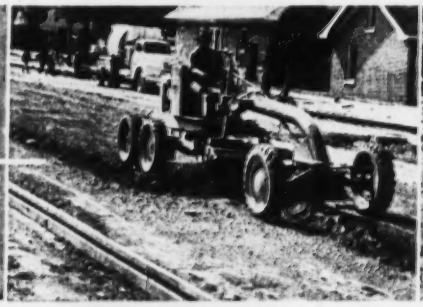
For even greater performance ability, power for the Model D has been boosted to 40 brake hp. Also, leaning front wheels and power circle turn now are available (optional). With these and other big-grader features such as tandem drive, ROLL-AWAY Moldboard, tubular frame and hydraulic blade lift — the Model D's original cost still is but one-third that of a large grader. Operating costs are low, too.

Your Allis-Chalmers dealer will be glad to demonstrate what the versatile, economical Model D can do for you.

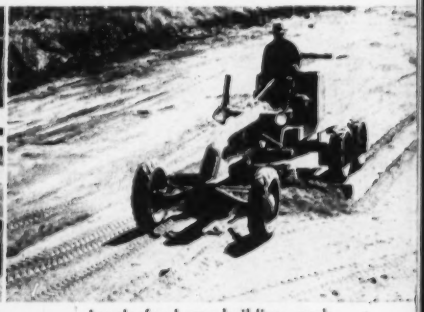
ROLL-AWAY is an Allis-Chalmers trademark.

ALLIS-CHALMERS
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.





Finish grades between forms on road and street construction.



Levels for home building, parking lots, play areas, etc.

Terraces, builds diversion ditches, does miscellaneous grader work.

Loads sand, gravel, dirt, any material, with ⅝-yd. bucket.

Rough grades, spreads and cleans up on street or road construction.

Landscapes, grades lawns, slopes, ditches around housing projects.

...for county and state highway departments

Scarifies with plenty of down pressure, accurate hydraulic control.

Mixes thoroughly, with rolling action of ROLL-AWAY moldboard.

Cuts and cleans ditches, slopes banks, grades shoulders.

Reshapes and maintains shoulders with rear-mounted attachment.

Loads sand, dirt, snow—any material — to trucks.

Keeps roads in shape the year-round — clears snow in winter.

...for cities towns and townships

Maintains streets and alleys, park drives, playgrounds.

Handles light construction on streets, roadways, etc.

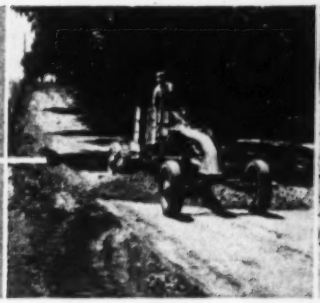
Backfills ditches, packs and levels ground, loads excess dirt to trucks.

Removes weeds from street sides and alleys, loads or hauls away.

Windrows snow with blade, or plows with V or blade plow.

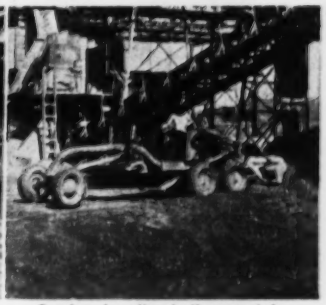
Loads snow from gutters, maintains stockpiles, handles bulk materials.

...and others



Builds and maintains access roads for quarries, cemeteries, etc.

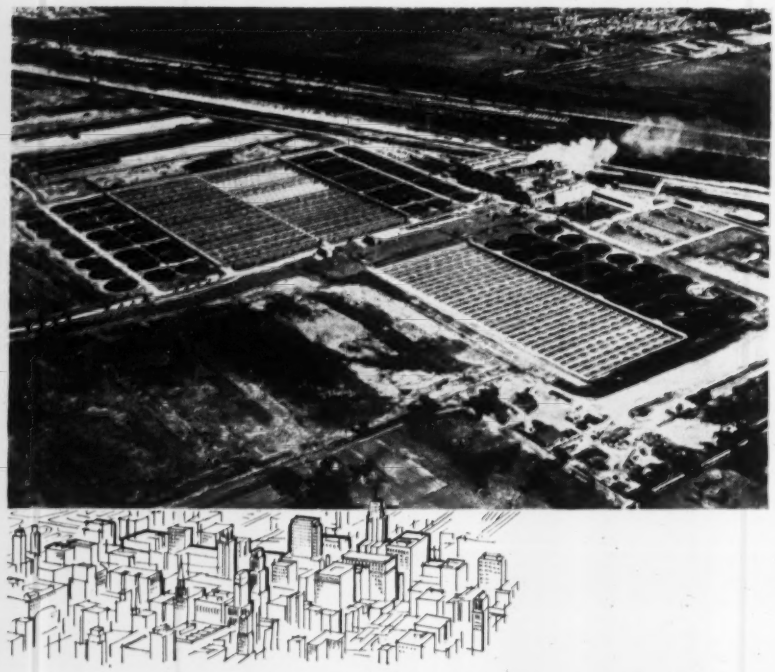
Clears and loads snow at quarries, storage yards, parking areas.



Grades, handles bulk materials around industrial plants.

CHICAGO "DOES IT AGAIN"

...now treats 900 MGD at West-Southwest



Treating sewage for the Chicago Metropolitan Area is big business. So big, in fact, that the West-Southwest Sewage Treatment Works is the largest activated sludge plant in the world. And this is but one of seven plants operated by The Sanitary District of Chicago.

Latest additions to the plant are the 24 Dorr Clarifiers shown in the right foreground of the photograph. These units (each 126′ dia.) are identical in type and design to the Dorr Clarifiers previously installed. Today, a total of 72 Dorr units at the West-Southwest Works have a combined average capacity of 900 MGD.

Whenever a process involves the separation of finely divided solids in suspension, the use of ion-exchange, or fluidizing techniques, Dorr and its Associated Companies throughout the world can provide the correct equipment for your job. THE DORR COMPANY, Stamford, Conn.

Better tools TODAY to meet tomorrow's demand

DORR

WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT

THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.

Offices, Associated Companies or Representatives in principal cities of the world.

OBITUARIES

in Portland, Ore. 1938-1939. From 1939 to 1944 he was field coordinator for Columbia Basin Joint Investigations of the Bureau of Reclamation at the Grand Coulee project in the state of Washington.

Edward Schildhauer, 80, designer of lock machinery for the Panama Canal and supervising engineer during construction, died in Los Angeles, Calif., May 24.

Harold H. Cullen, 70, former roads engineer in Somerset County, Md., died May 14 at Crisfield, Md.

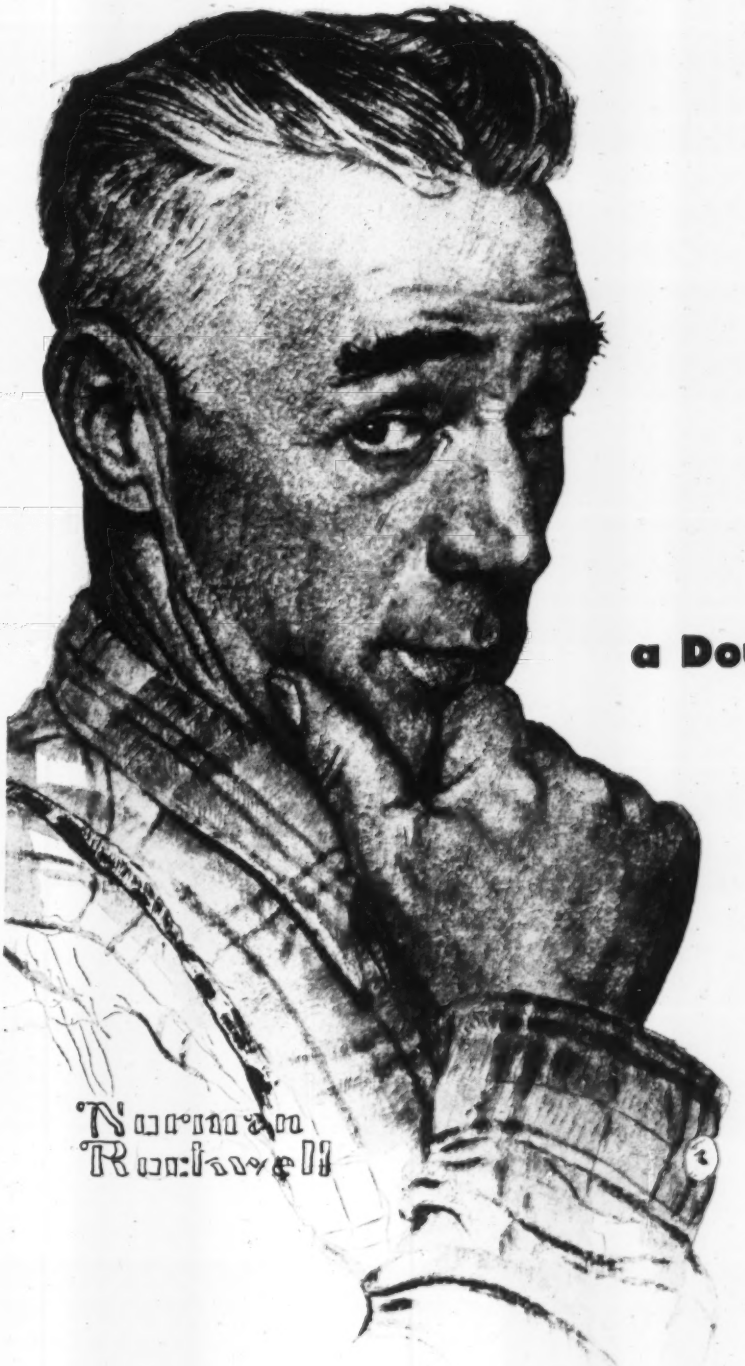
John H. Ray, 84, a contractor in Buffalo, N. Y., for more than half a century, died May 15. He was active in his business until a few weeks ago.

Frank O. Ray, 62, city engineer of Colorado Springs, Colo., from 1921 to 1949, and since then a consulting engineer, died May 14.

Henry Clay Gwin, 83, retired civil engineer, died April 29 in Altoona, Pennsylvania.

Harrie Muchemore, 69, civil engineer, died in Sanford, Fla., recently. He was graduated from the Thayer School of Civil Engineering at Dartmouth in 1906. Most of his experience was on heavy construction, dams, dry docks, sewage treatment works, etc., and he became an expert on construction plant and methods. In 1931 he was chief engineer for W. H. Gahagan, Inc., which had the general contract for the Ward's Island Sewage Treatment Works, N. Y. City. Then he went with the Turner Construction Co., working on the Alton Dam and the Carderock Naval testing basin. At the start of the Pacific Naval Air Base work he went to Pearl Harbor as chief engineer, remaining there until 1943. He was responsible for the planning of the construction plant and methods used in construction of many large Naval projects in the Pacific from 1939 to 1943, winning the U. S. Navy Meritorious Civilian Service Award in 1943.

He was chief engineer of the joint management contract under which Turner and Spencer, White and Prentis managed the building of 93 large fleet tankers for the Alabama Drydock and Shipbuilding Co. After the war he returned to New York and worked on joint ventures, assisting in the preparation of estimates for various projects including the Chain of Rocks Locks on the Mississippi River. He retired in 1949.



You?...

a Doubting Thomas?

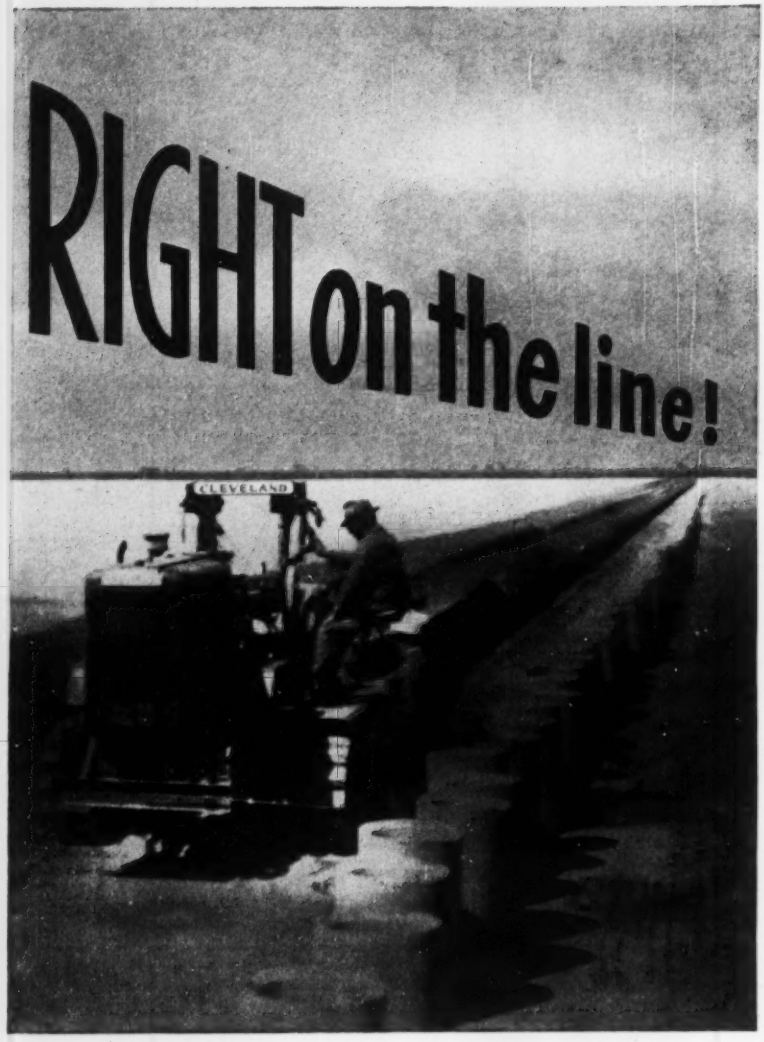
IF YOU'RE a man who has to be shown, we're right in your corner. Just give Roebling "Blue Center" Steel Wire Rope one try... see for yourself how it saves time and costs you less on the job.

Two out of three wire rope users in excavating and construction prefer Roebling rope. Call the nearest Roebling office for a Field Man to suggest the best ropes for your purposes.

ROEBLING CFI

A subsidiary of The Colorado Fuel and Iron Corporation

JOHN A. ROEBLING'S SONS CORPORATION, TRENTON 2, N. J. BRANCHES: ATLANTA, 934 AVON AVE. • BOSTON: 51 SLEEPER ST. • CHICAGO, 5525 W. ROOSEVELT RD. • CINCINNATI, 3253 FREDONIA AVE. • CLEVELAND, 13225 LAKEWOOD HEIGHTS BLVD. • DENVER, 4801 JACKSON ST. • DETROIT, 915 FISHER BLDG. • HOUSTON, 6216 NAVIGATION BLVD. • LOS ANGELES, 5340 E. HARBOR ST. • NEW YORK, 19 RECTOR ST. • ODESSA, TEXAS, 1920 E. 2ND ST. • PHILADELPHIA, 230 VINE ST. • SAN FRANCISCO, 1740 17TH ST. • SEATTLE, 900 1ST AVE. S. • TULSA, 321 N. CHEYENNE ST. • EXPORT SALES OFFICE TRENTON 2, N. J.



ON IRRIGATION PROJECTS, TOO—*as on all types of trenching jobs*—Clevelands show why they are known throughout the world for outstanding, all-around Dig-Ability. The reason is simple: Clevelands deliver big daily production year after year, with utmost dependability and at very low cost. That's why Clevelands are *RIGHT on the line* for you!

Get the full story on CLEVELANDS from your local distributor

THE CLEVELAND TRENCHER CO.

Pioneer of the Modern Trencher

20100 ST. CLAIR AVENUE • CLEVELAND 17, OHIO

BOOKS

Highway intersections

CHANNELIZATION: The Design of Highway Intersections at Grade—Special Report No. 5, Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. $6.00.

This report on channelization for highway intersections at grade is the result of a cooperative project of the Committee on Channelization of the Highway Research Board and the Texas Engineering Experimental Station at Texas A & M College. It brings together the best thinking of highway and street traffic officials on how accidents at intersections can be materially reduced by prescribing the routes to be followed for all movements through the intersection. Traffic flow also is speeded by this system.

Most of the book is devoted to actual examples of channelization, with before and after drawings, generally with explanations of why a particular form was adopted.

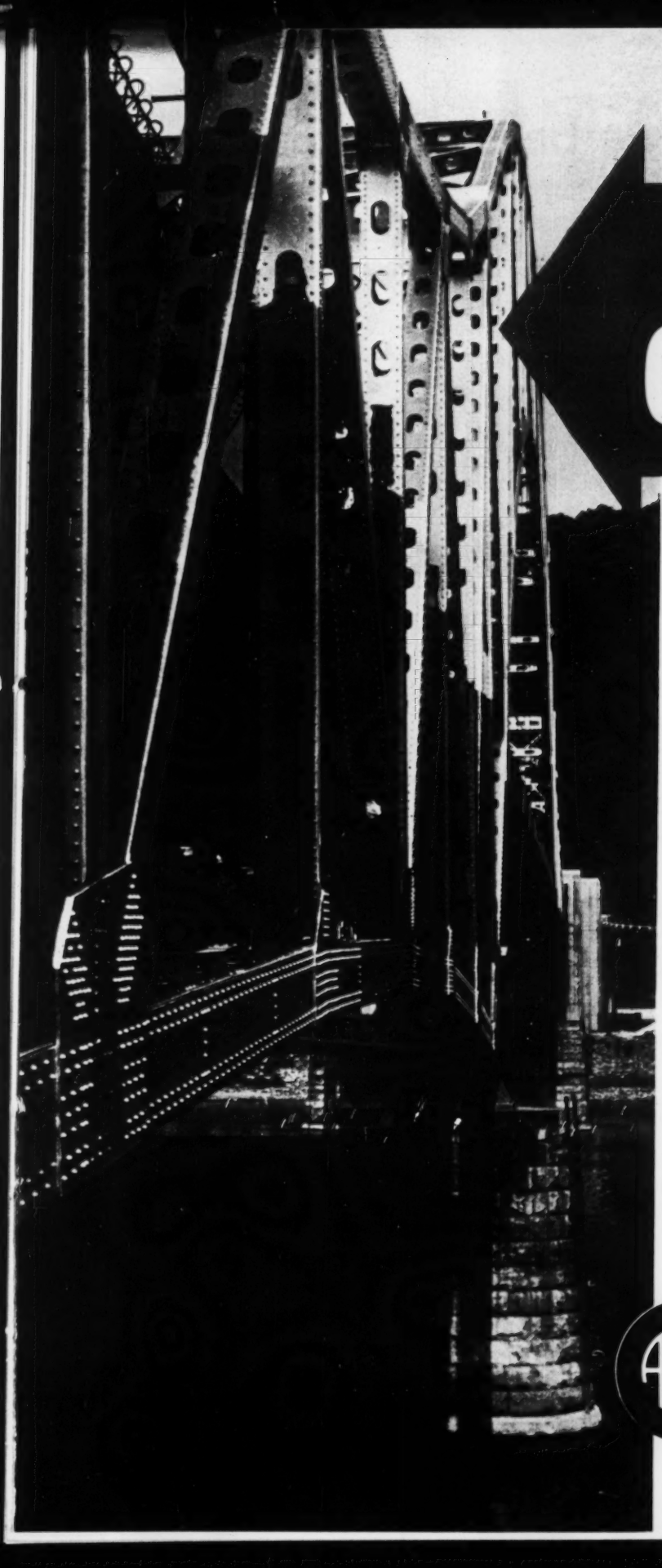
This report shows strikingly how much progress has been made since the day when the basic principle of intersection design was to cut back corners and give vehicles as much space as possible in which to make their way helter-skelter through the intersection.

What's behind reclamation?

RECLAMATION IN THE UNITED STATES—By Alfred R. Golzé. 451 pp. McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y. $8.

The economic, legal and administrative aspects of multi-purpose water resource projects involving land reclamation are covered in this book. Information is provided on broad reclamation policies and practices that probably has not previously been made available in one book. For that reason this book could be considered a must for an engineer, accountant or lawyer who is moving to broader administrative fields related in any way to reclamation work.

Mr. Golzé writes on the basis of his experience as Director of Programs and Finance in the Bureau of Reclamation's Washington, D. C., headquarters. He has made a sincere effort to cover all types of reclamation work—private, local, state, and by other federal agencies. But obviously he must lean heavily on Bureau of Reclamation practices. And with some justification as the USBR has done more large-scale work than any other agency.



When you specify

STEEL Construction

You're sure of

- **STRENGTH AND DURABILITY**
- **ADAPTABILITY AND UNIFORMITY**
- **FASTER ERECTION**
- **VERSATILITY AND SECURITY**

And when you specify Fort Pitt Bridge for the engineering, fabricating and erection of Structural Steel *for any purpose*, you're sure of getting an organization with unexcelled facilities and over 56 years experience of specialization in all types of Steel Construction.

"Steel Permits Streamlining Construction With Safety, Endurance and Economy."

Fort Pitt **BRIDGE WORKS**

Member American Institute of Steel Construction

AISC

GENERAL OFFICES
PITTSBURGH, PA.

PLANT AT
CANONSBURG, PA.

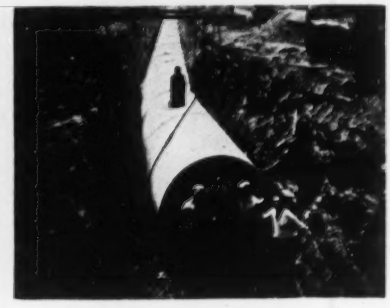
DISTRICT OFFICES
NEW YORK, N. Y.
CLEVELAND, OHIO
DETROIT, MICHIGAN

They all come back for more...

from LOCK JOINT

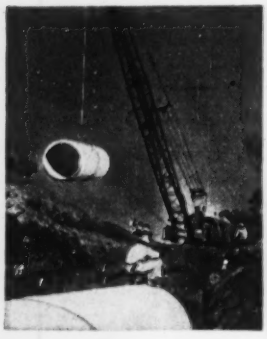
36" Lock Joint Reinforced Concrete Cylinder Pipe being installed for Norfolk, Va.

Laying 72" Lock Joint Reinforced Concrete Cylinder Pipe at Detroit, Mich.



YEAR AFTER YEAR satisfied customers turn and return to Lock Joint to solve their pressure pipe problems. The customers listed on this page have reordered Lock Joint Pipe from twice to more than forty times for the continuing construction of major water works installations . . . a total of nearly 1,500 miles of Lock Joint Pipe delivered on *reorders alone*. The variety of Lock Joint's designs makes the pipe suitable for any water works project requiring pressure pipe 16" in diameter or larger. Its low first cost, negligible maintenance charges, permanent high carrying capacity and unfailing service cause more and more water works officials to agree that "You can't go wrong with Lock Joint."

Laying 66" Lock Joint Reinforced Concrete Pressure Pipe for Tulsa, Okla.



Installation of 90" Lock Joint Reinforced Concrete Pressure Pipe for Denver, Colo.

Alexandria, Va. • Altus, Okla. Ashtabula, Ohio • Baltimore, Md. Bethlehem, Pa. • Birmingham, Ala. Boston, Mass. • Caracas, Venezuela Charlotte, N. C. • Chattanooga, Tenn. • Chicago, Ill. • Cleveland, Ohio • Cumberland, Md. • Denver, Colo. • Detroit, Mich. • Dominican Republic • E. St. Louis, Ill. • Flint, Mich. • Ft. Collins, Colo. • Greeley, Colo. • Greensburg, Pa. Harrisburg, Pa. • Hartford, Conn. Houston, Tex. • Huntington, W. Va. Huntsville, Ala. • Hyattsville, Md. Johnstown, Pa. • Kansas City, Mo. Little Rock, Ark. • Louisville, Ky. Maracaibo, Venezuela • Mobile, Ala. • Newark, N. J. • Newport News, Va. • New York City, N. Y. Norfolk, Va. • Paterson, N. J. Portland, Me. • Portsmouth, Va. Providence, R. I. • Pueblo, Colo. Richmond, Va. • Rochester, N. Y. Saginaw, Mich. • San Juan, Puerto Rico • Shreveport, La. • South Pittsburgh, Pa. • Syracuse, N. Y. Tennessee Valley Authority Toledo, Ohio • Trenton, N. J. Tulsa, Okla. • Washington, D. C. W. Palm Beach, Fla. • Wichita, Kan. • Wilmington, Del. Worcester, Mass.

SCOPE OF SERVICES—*Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains 16" in diameter or larger, as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.*

LOCK JOINT PIPE COMPANY

Established 1905

P. O. Box 269, East Orange, N. J.

PRESSURE PIPE PLANTS: Wharton, N. J., Turner, Kan., Detroit, Mich., Columbia, S. C.

SEWER & CULVERT PIPE PLANTS:

Casper, Wyo. • Cheyenne, Wyo. • Denver, Col. • Kansas City, Mo. Valley Park, Mo. • Chicago, Ill. • Rock Island, Ill. • Wichita, Kan. Kenilworth, N. J. • Hartford, Conn. • Tucumcari, N. Mex. • Oklahoma City, Okla. • Tulsa, Okla. • Beloit, Wis. • Hato Rey, P. R. • Caracas, Venezuela

LOCK JOINT Reinforced Concrete PRESSURE PIPE

BOOKS

An idea of the content can be had from a listing of some of the chapter headings: reclamation law, allocations of costs, multi-purpose projects, repayment by water users, repayment by power and other users, and settlement, to name a few.

Reports and pamphlets

ENGINEERING—A CREATIVE PROFESSION—A guidance manual published by the Engineers Council for Professional Development, 33 West 39th St., New York 18, N. Y. Single copies 25¢, less in quantities.

FORETHOUGHTS ON CONSTRUCTION PROBLEMS—By Morton C. Tuttle, President, Morton C. Tuttle Co., Mark Square Bldg., Boston, Mass.

REGIONAL DWELLING HOUSE CODE—Prepared by Regional Planning Commission, 415 The Arcade, Cleveland 14, Ohio, for use in the Greater Cleveland suburban area.

WHO ME? . . . THE TRAVELERS 1953 BOOK OF STREET AND HIGHWAY ACCIDENT DATA—The Travelers Insurance Companies, Hartford, Conn.

SANITATION ADMINISTRATION IN THE LOS ANGELES METROPOLITAN AREA—Bureau of Governmental Research, University of California, Los Angeles, Calif.

A CHOICE OF GUIDES—By Thomas H. MacDonald. Distributed by the Automotive Safety Foundation, 700 Hill Bldg., Washington 6, D. C.

TENTATIVE STANDARD SPECIFICATIONS FOR QUICKLIME AND HYDRATED LIME—American Water Works Association, 521 Fifth Ave., New York 17, N. Y. 25¢.

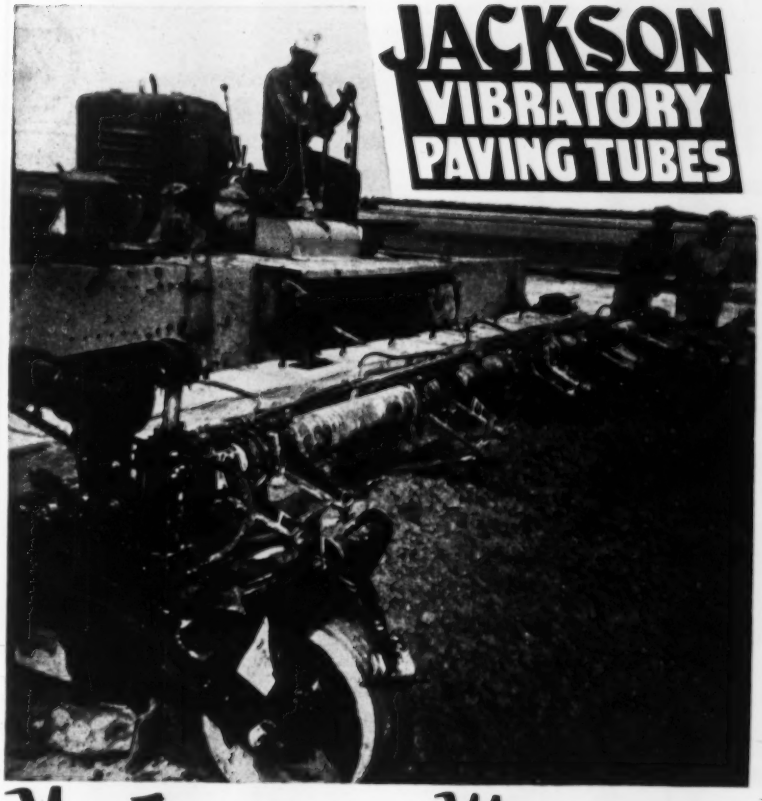
AN ELECTRIC RECORDING WATER METER—Circular Series No. 65, University of Illinois Engineering Experiment Station, Urbana, Ill. 20¢.

COMPARATIVE PERFORMANCES OF TWO WARM-AIR PERIMETER SYSTEMS AND THREE CONVECTION SYSTEMS—Bulletin Series No. 403. University of Illinois Engineering Experiment Station, Urbana, Ill. 60¢.

GRADUALLY VARIED FLOW IN UNIFORM CHANNEL ON MILD SLOPES—Bulletin Series No. 404, University of Illinois Engineering Experiment Station, Urbana, Ill. $1.00.

PROCEEDINGS OF THE OHIO HIGHWAY ENGINEERING CONFERENCE: 1952—Bulletin No. 150, Engineering Experiment Station, Ohio State University, Columbus. $1.00.

ZONING FOR TRUCK-LOADING FACILITIES—Bulletin 59, Highway Research Board, Washington 25, D. C. $1.50.



JACKSON VIBRATORY PAVING TUBES

Now SUPER-POWERED More FLEXIBLE FOR THOROUGH INTERNAL VIBRATION OF ALL SLABS 6" TO 24" THICK - UP TO 25' WIDE!

Now supplied with far more powerful motors, as many as five to the 25' width, there is no job of concrete HIGHWAY OR AIRPORT PAVING too tough for the JACKSON VIBRATORY PAVING TUBE! Extremely flexible, it may be had with just the number of motors needed and vibratory frequency variable to suit concrete mix. Easily attached to standard finisher or spreader, its use assures:

1. Maximum compressive strength and impermeability of the hardened concrete through use of dryer, more economical mixes. 2. Faster finisher progress in normal highway paving. 3. Complete and uniform compaction throughout the mass, with no mortar streaks — even on 25' airport slabs. (It is equally efficient where air-entraining cement is used). 4. Adequate puddling at sideforms on the average paving job. 5. Excellent finish without excessive mortar. 6. Reduction in spreading cost wherever a spreader is not used . . . the powerful vibratory action and plasticity achieved, smooths out the major humps and hollows.

For better results, as well as time-and-money savings to be achieved on any major concrete paving job, get the complete facts concerning the Jackson Vibratory Paving Tube. See your Jackson Distributor or write to us.

JACKSON VIBRATORS, INC.

LUDINGTON, MICHIGAN

ECLIPSE FUEL ENGINEERING WRITES:

"Heat Prover Completed a 30 Hour Burner Test In Just 6 Hours!"

Amazing Cities Service Heat Prover Works 5 Times As Fast As Old Method... More Accurate, Too!

Robert W. Pixler, Laboratory Supervisor for Eclipse Fuel Engineering Company, Rockford, Illinois writes:

"It did not seem possible that an instrument that is so fast and direct-reading could possibly have the accuracy we demand. But, we found the Heat Prover equally exact, possibly even more exact, than standard commercial testing equipment.

"Our test work with previous instruments was a long, drawn-out affair. But with the Heat Prover, we completed what would normally have been a 30-hour test in just 6 hours! ...and we doubt that our old equipment could have maintained the accuracy delivered by Cities Service Heat Prover."

WHEREVER A FURNACE OPERATION IS INVOLVED, the Heat Prover can help increase productivity by providing:

- **Rapid, continuous sampling**
- **Simultaneous reading of oxygen and combustibles**
- **Direct measurement of oxygen and combustibles**
- **Easy portability**
- **No maintenance; no re-calibration**

For details, contact nearest Cities Service office or write Cities Service Oil Company, Dept. F-9 Sixty Wall Tower, New York City 5, N. Y.

QUALITY PETROLEUM PRODUCTS

CITIES SERVICE

Errors in amount of bid

A contractor submitted the low bid for the construction of a public school building and the contract was awarded to him. The amount of the bid was $52,050.

The day after the contract was awarded to him the contractor discovered that through the faulty manner in which he manipulated the adding machine, he had omitted to include in his bid, an item that amounted to $5,000, and asked to be relieved of the bid or, if the other party insisted upon his proceeding with the work, that the contract price should be increased to $57,050, which was the bid that he really intended to make. The increased figure was still lower than the next lowest bidder, also much lower than the architect's estimate of the entire cost of the work involved. Upon the refusal to permit him to withdraw the bid or to increase the contract price of the work, the contractor brought an action to rescind and cancel the bid.

The trial court granted the contractor a judgment authorizing him to withdraw the bid. The judgment was reversed by the Appellate Court.[1]

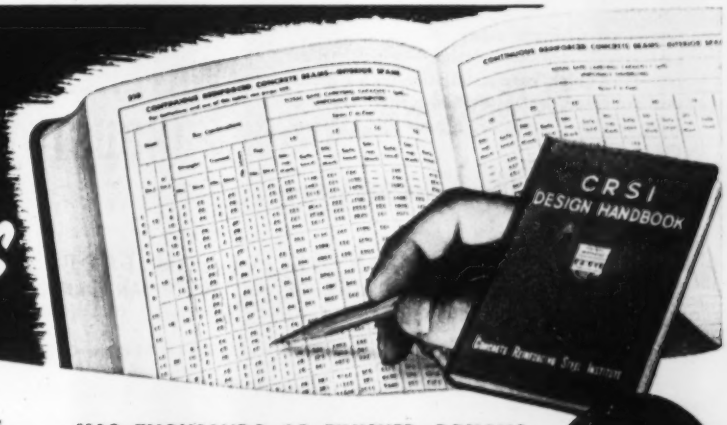
The Appellate Court in its opinion stated, in part: "By the rule generally approved, equity will not relieve against the mistake of one guilty of culpable negligence, neither will it relieve against a mistake that could have been avoided by caution. If one seeking relief could have avoided his mistake by reasonable care or diligence, a court of equity will not relieve him. In other words if one's mistake is due to his own negligence and lack of foresight and there is absence of fraud or imposition, equity will not relieve him.

"Appellee contends that the judgment of the court below canceling his bid should be affirmed on authority of Moffett, Hodgkins & Clark Co. v. Rochester, 178 U.S. 373, 20 S. Ct. 957, 44 L. Ed. 1108; Kutsche v. Ford, 222 Mich. 442, 192 N.W. 714; and School District of Scottsbluff v. Olson Construction Co., 153 Neb. 451, 45 N.W. 2d 164. These cases deal with unilateral mistakes in contracts, some phases of which are similar to those in the case at bar, but others are quite different. . . .

"In some of the cited cases the error was made by a clerk or some one in the employ of the complaining party. In the case at bar the error was made by appellee. He lays it on a defect in and the manner in which he manipulated his adding machine in computing the items that composed his bid. He testified, however, that he verified all his computations before submitting his bid to the appellants. The error, in other words, was due to some dereliction on the part of appellee, rather than on some one employed by him. Whether it was failure to exercise due care or was due to oversight, we are not in position to say. It is certain that the error was a very small percent of the bid, in fact, so small that it was not perceptible at a glance as was the case in some of the cases relied on by appellee.

"After all, the most that can be said is that appellee is seeking relief from a clerical error that he alone was responsible for. It is not contended that an honest unilateral error in reference to a material fact relative to the contract was made. If errors of this nature can be relieved in equity,

HOW TO DESIGN A REINFORCED CONCRETE MEMBER IN 30 SECONDS



NEW CRSI DESIGN HANDBOOK . . . HAS THOUSANDS OF FINISHED DESIGNS ALL WORKED OUT!

412 PAGES
$5.00

Now it takes only a few seconds to design a reinforced concrete member! No more laborious algebraic formulas and calculations. The CRSI Design Handbook has the answer to any finished design problem. You simply locate the table covering the member you are designing, apply span and load requirements, then *read off directly* exact concrete dimensions and reinforcing steel data. It's that easy. The latest building codes and engineering practices are followed.

Prepared under the direction of the Committee on Engineering Practice
CONCRETE REINFORCING STEEL INSTITUTE

SEND FOR YOUR COPY . . . TODAY!

CONCRETE REINFORCING STEEL INSTITUTE
38 South Dearborn St., Chicago 3, Ill.

I am enclosing $5.00. Please send me a copy of "CRSI Design Handbook." If not completely satisfied, I will return the book within ten days for a full refund. (No C. O. D. orders accepted.)

NAME_____

ADDRESS_____

CITY_____ STATE_____

Another
FIRST
FOR
SMITH-BLAIR...

NOW!
SMITH-BLAIR
Ductile Iron
TAPER SEAL
SERVICE CLAMPS!

For the first time, the amazing new material, ductile iron, is available in the complete line of Smith-Blair "Taper Seal" Service Clamps!

Ductile iron service clamps offer the important advantages of bronze—at less cost. They are stronger, more ductile—and have a corrosion resistance that is superior to malleable or cast iron.

Combined with the many advantages of the exclusive "Taper Seal" design—which makes possible a quick, easy installation with a more positive water seal—the Smith-Blair Ductile Iron Service Clamps set a new standard for the industry!

• *Write today for complete information:*

Another
FORWARD
STEP
For the
WATERWORKS
INDUSTRY

SMITH BLAIR INC.

MAIN OFFICE and FACTORY
535 RAILROAD AVE., SOUTH SAN FRANCISCO
BRANCH PLANTS: DOWNEY, CALIFORNIA
GREENSBURG, PENNSYLVANIA
DISTRIBUTORS IN PRINCIPAL CITIES

Core Drilling *by Contract*

Exploration for coal and other mineral deposits. Foundation test boring and grout hole drilling for bridges, dams and all heavy structures. ***Core Drill Contractors for more than 60 years.***

JOY MANUFACTURING CO.
Contract Core Drill Division • MICHIGAN CITY INDIANA

LEGAL

our system of competitive bidding on such contracts would in effect be placed in jeopardy and there would be no stability whatever to it. It would encourage careless, slipshod bidding in some cases and would afford a pretext for the dishonest bidder to prey on the public.

"If the relief prayed for in this case is granted then any clerical error or error in calculation can be relieved against. We do not think this is the law. Unilateral errors are not generally relieved against. After the bid is accepted, the bidder is bound by his error and is expected to bear the consequence of it." (Numerous cases were cited to support this conclusion.)

"The problem is one in the application of nice distinctions that separate the line between liability and non liability for errors in bidding, but exegesis of such distinctions makes clear that the error complained of is on the side of liability which a court of equity cannot relieve. The judgment appealed from is therefore reversed."

[1] I. Graham et al. v. Clyde, 61 So. 2d 656, Supreme Court of Florida Nov. 4, 1952.

Substantial performance

"The question of substantial performance should be determined in each case with reference to the existing facts and circumstances of the case. Substantial performance does not contemplate a full or exact performance in every slight or unimportant detail but performance of all important parts."[1]

(1) Wilson v Williams et al., 59 So. 2d 616, Supreme Court of Alabama, May 29, 1952.

Rescission of contracts

"It is a general rule that one who desires to rescind a contract must act within a reasonable time; see Dennis v. Jones, 44 N. J. Eq. 513, 14 A. 913, and what is a reasonable time depends upon the circumstances of each particular case. It is also the rule that the party seeking cancellation of rescission must restore the other party to status quo."[1]

"'In 12 'American Jurisprudence', p. 1038, Sec. 455, the author says: 'The effect of rescission of an agreement is to put the parties back in the same position they were in prior to the making of the contract.'"

"To the same effect is 17 C.J.S., Contracts, Sec. 392, p. 884."[2]

(1) Grabendike v. Adix, 55 N.E. 2d 761.
(2) Evans et ux. v. Brubaker, 247, P. 2d 511.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)

MODEL 450 REMINGTON STUD DRIVER

Here's new economy . . . new speed in construction fastening! The Remington Stud Driver joins wood or steel sections to concrete or steel surfaces in seconds . . . easily sets as high as 5 studs a minute. Powerful 32 caliber charges drive studs arrow-straight. The tool's light weight—only 5½ pounds—simplifies handling wherever studs are needed.

New guards for specific uses now make the self-powered Remington Stud Driver more versatile than ever. These attachments take all the guesswork out of stud location . . . assure fast, accurate fastening for every job. Illustrated are just 4 of these special guards. For full information about the *complete line* and about the Remington Stud Driver, send the coupon below.

A complete line of guards for special applications

Listed & Approved by Underwriters' Laboratories, Inc.

MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. ENR-6
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

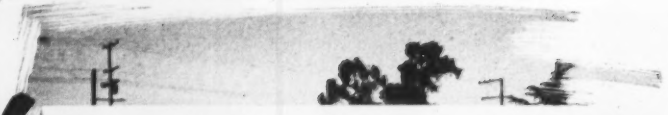
Please send me my *free* copies of the new booklets showing how I can cut my fastening costs.

*Name*_____
*Position*_____
*Firm*_____
*Address*_____
*City*_____ *State*_____

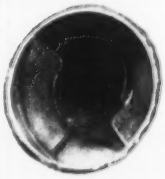
"If It's Remington—It's Right!"

Remington DUPONT

Mr. Contractor... these OUTSTANDING Challenge features work together FOR YOU!



1 **FIRST, THERE'S THE CHALLENGE PATENTED "DAM"*** . . . a unique system of baffle plates integrally welded to the rear cone section of the drum which makes the heavy old fashioned drum seal obsolete. The Challenge "DAM" cooperates actively in the thorough, uniform mixing action and fast, efficient discharge. There's no pay-load-eating dead weight here. With Challenge-Mixed concrete you get more concrete in fewer trips . . . less interruptions on the job!



*U. S. Patent #2,618,472

2 **SECOND, THERE'S THE CHALLENGE CONTINUOUS TYPE "THORO-MIX" BLADES** . . . working with the reverse fins in the head section of the drum providing continuous agitation, continuous blending of aggregate, cement and water to form concrete that's uniformly and thoroughly mixed. Here is a truck mixer that mixes at top efficiency to give you better concrete on your job.

3 **THIRD, THERE'S THE LOW 14° DRUM ANGLE** . . . adopted by Challenge engineers after extensive research demonstrated maximum mixing and discharge efficiency from this angle. The low 14° angle of the drum assures faster discharge of the lowest slump concrete, yet maintains highest discharge height above the truck chassis. Challenge Mixers are on and off the job in less time.

- **MAKE BETTER CONCRETE**
- **DISCHARGE COMPLETE LOAD IN MINIMUM TIME**
- **LARGER CAPACITY MEANS LESS TRIPS & INTERRUPTIONS ON THE JOB**

MEMBER N.R.M.C.A.

Cook Bros. Equipment Co.
Please send name and address of nearest Challenge dealer.

NAME _____

ADDRESS _____

CITY _____ STATE _____

COOK BROS. EQUIPMENT COMPANY

3734 San Fernando Road, Cleveland 6, 3151
Los Angeles 65, California

Exclusive National Distributor For CHALLENGE TRUCK MIXERS . . . *Standard of The Industry*

MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
July Materials, and Labor Prices will appear in July 9, 1953 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots cash. dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4, over.
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand	grav. Lt. wgt. agg.	50 c.y., del.
Atlanta	$3.87	$3.56	3.40	$2.075	$2.075	$1.83	$2.20	$2.20	$1.87	$1.99	$0.21	$0.21	$12.06
Baltimore	3.90	3.60	3.53	2.50‡a	2.50‡a	2.00‡a	2.70‡a	2.80‡a	2.60‡a	2.55‡a	.17	.17a	11.45
Birmingham	3.26	2.96	....	2.38n	2.38n	2.08n	2.50	2.50	1.25	1.35	.165	.168	10.45
Boston	4.16	3.84	3.96	2.50a	2.50a	2.50a	1.50a	1.60a	....	....	.215	.245a	12.00h
Chicago	3.48	3.17	...	3.25‡b	3.25‡b	3.65‡b	3.25‡b	3.25‡b	2.25‡	2.25‡	.23	.23b	11.70/11.94
Cincinnati	3.78	3.55	3.55	2.19‡c	2.24‡c	2.24‡c	2.54‡*	2.54‡*	....	....	.21	.225a	10.95
Cleveland	N. A. in C. L.		....	2.05e/f	1.85f	1.65	4.14a	4.14a	3.15‡	3.15‡	....	.24	14.40e
Dallas	3.15	2.85	2.90	2.18	2.28	1.84	2.22	2.38	....	....	.125e	.215	9.30
Denver	4.04	3.74	4.04	1.85	2.00	1.20	....	....	....	....	.23	.255a	10.80
Detroit	3.47	3.20	3.25	4.25‡b	4.25‡b	3.75‡b	4.25‡	4.25‡	4.25‡	4.25‡	.21	.21a	10.70/
Kansas City	3.30i	3.03i	3.15i	1.85‡	1.85‡	1.50‡a	2.00‡a	2.00‡a	....	....	.20a/g	.218a	12.00b
Los Angeles	4.32a	3.80a	4.92	2.11a	2.31a	2.06a	2.06a	2.16a	....	....	.135/m	.237m	11.71h
Minneapolis	3.95d	3.64d	3.56	2.45‡a/g	2.45‡a/g	1.45‡a/g	2.60‡a/g	2.60‡a/g	....	....	.234h	....	11.90/i
Montreal	3.16a/c	2.96a/c	....	3.00	3.00	2.25	1.15/j	1.40/j	....	....	.20	.20a	9.65e/k
New Orleans	3.35	3.02	3.18	2.32	2.32	1.82	....	....	1.05	1.25	.25	....	12.90
New York	4.01	3.70	3.53	2.65b/k	2.65b/k	1.75b/k	2.50b/l	2.80b/l	....	....	....	....	12.55a/n
Philadelphia	3.58/3.97‡	3.27/3.64‡	3.58/3.63‡	2.75‡/*	2.75‡/*	2.15‡/*	2.10‡	2.15‡	1.75	1.85	.22/.25	....	12.00e/*
Pittsburgh	3.47	3.19	3.47	2.25‡	2.25‡	2.20‡	2.60‡	2.60‡	2.15	2.15	.23d	.23d	13.00
St. Louis	3.47/3.68b	3.04/3.30b	3.25/3.42	3.10a/m	2.90a/m	2.50/2.90a/m	1.70/j	1.70/j	1.50	1.50	.215	.215e/i	10.40
San Francisco	3.56	3.16	....	1.92	1.92	2.02	2.02	2.02	....	....	....	.27e/l	11.25e
Seattle	4.05a	3.45a	4.80h	3.00‡b/m	3.00‡b/m	3.00‡b/m	3.50‡b/m	3.50‡b/m	....	....	.24/j	.3325/j	11.90/j

Delivered. * Prices incl. dealers discount except as noted.

CEMENT: a Subj. to 10¢ dis. b Less 2% for cash. c CL price dealers discount not incl. d Dealers sell only LCL. h LCL.

SAND, GRAVEL, STONE & SLAG: a Truck lots. b Per cu. yd. c 5 tons or more. e ¾". f Pea gravel. g Less 5% for cash. h Less than 5 tons. i Sales tax incl. j F.o.b. quarry. k Barge lots asd. l F.o.b. scow Hudson river. m Less 2% for cash. n F.o.b. cars. o 1-3 mi zone. p Add 10¢ for ea. add'l 3-mi zone

CONCRETE BLOCK: a Cinder. b Waylite. c Haydite. d Celocrete. e 5⅓ x 8 x 12 in. f 8 x 4 x 16. g F.o.b. truck at job. i Less 2% for cash. j Less 1% for cash. k 8x8x18. l F.o.b. plant San Rafael. m F.o.b. yard.

READY MIXED CONCRETE: a 5 cu. yds. or over del. Man. b 25 cu. yds. or more. c 10–100 cu. brackets. d 1–3 mi. zone. e 2,000 lb concr. f 2500 lb. comp. h Less 50¢ for cash. i 5% off for cash. j 2% off for cash. k Sales tax included. l 1:2½:4. m F.o.b. yard. n Plus escalator clause. o Add 15¢ for ea. add'l 3-mi zone

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10c. per bbl. for payment within 15 days of date of invoice. Subject discount 10c. per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 30¢ per bbl., not refundable

	Bulk		Bulk		Bulk		Bulk
Richard City, Tenn.	$2.75†	Buffington, Ind.	$2.70†	Steelton, Minn.	$2.80†	Muskegon, Mich.	$2.85†	Toledo, O.	$2.75†
Clinchfield, Ga.	2.75†	Independence, Kan.	2.65†	Leeds, Ala.	2.60†	Saginaw, Mich.	2.75†	Milwaukee, Wis.	2.90†
Kingsport, Tenn.	2.75†	Hannibal, Mo.	2.70†	Duluth, Minn.	2.80†	Wyandotte, Mich.	2.75†	Green Bay, Wis.	2.90†
West Des Moines, Iowa.	2.80†	Northampton, Pa.	2.75†	Hudson, N. Y.	2.75†	Buffalo, N. Y.	2.75†	Ironton, O.	2.75†
Nazareth, Pa.	2.75†	Universal, Pa.	2.80†	Alpena, Mich.	2.65†	Oswego, N. Y.	2.90†	Montreal City	3.66
Bath, Pa.	2.75†	Waco, Tex. (+ 10¢ tax)	2.65†	Detroit, Mich.	2.75†	Cleveland, O.	2.75†	W. Winfield, Pa.	2.80†

† *Prices to hold for second quarter of* 1953.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80–300 penetration		CUTBACK ASPHALT Per ton		ROAD OIL Per gal.	ASPHALT EMULSION (Quick-breaking) Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta	$82.00	$41.00	$2.25	$26.00	$33.25	$0.215	$0.455	$0.095/w	$0.185/w	$0.105	$0.115	$0.225
Baltimore	150.00‡	58.00‡	.....	22.00i	.....	.0809i	0.15i	.09i/w	.17i/w	.09i	.09i	0.12i
Birmingham	.....	45.50i	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	24.50a	35.50a	22.00a/s	35.50a/s	.....	.....	.09a	.105a	.22a
Chicago	155.00‡	90.00‡b	4.40/4.60‡/f	20.25b	30.25b	19.25b/s	29.25b/s	.0875b/w	.18b/w	.075b	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	200.00	65.00d	5.03g	23.00/4	.....	23.00/4	.....	.1025/4/w	.....	.....	.11/4	.18/4
Dallas	e	40.00	e	24.05	43.09	.1016	.2103	27.09	47.87	.0980	.1041	.2128
Denver	.....	48.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	92.00	... ..	27.21	.....	27.21/s	.....	.1202/w	.....	.0925	.....	.2811/s
Kansas City	e	e	e	15.00e/l	...	.055	.....	.065e/w	.....	.055e	0.435	.....
Los Angeles	e	.....	e	16.00d/m/z	...	16.00d/z	... ..	16.00d/z	.....	17.00d/p	.0825/j	.1725/j
Minneapolis	.....	.....	2.97h	25.07	.....	24.07	.....	.0744/w	.....	.0644	.0785	.....
Montreal	.....	e	e	27.10n	38.65n	.135n	.193n	16.30n/u	18.80n/u	.132n	.184n/z	.225n/z
New Orleans	.....	.....	.....	17.50e	....o	17.50e/s	.....o	.085e/w	.....o	.0825/#	.085	. ...
New York	.....	.....	3.12/f	26.26q	47.59q	25.26e/t	46.58e/t	.1071/w	.2021/w	.1071	.1072	.1993
Philadelphia	175.00	110.00	4.06	22.00	....	.....	.....	.095u	.....	.....	.....	.....
Pittsburgh	165.00	48.00	4.60	27.00	37.00	.10	.21	27.00	39.00	.095	.09	.205
St. Louis	.....	.....	.....	18.66/f	....	.1758	.....	.084 / .0865e	.....	0.155	.10	.....
San Francisco	.....	55.00e	.....	17.50g	33.00g/p	17.50g/k/s	23.00g/k/s	20.00g	37.50g	18.75e	.085g	....
Seattle	.....	.....	.....	17.50h	38.00h	17.25h/s	.....	20.00h	...	19.75h/e	.095h	.105h/z

‡ Delivered.

PAVING BRICK & BLOCK: a CL. b 3½ x 4 x 8½. c 2½ x 8½ x 4. d LCL, truck deliveries. e Not used. f 2" interior 6¢ treat. g 3". h 8¢ treat. i 3 x 3⅝ x 8½.

ASPHALTS: a Price at plant, Everett, Mass. b F.o.b. refinery, Lockport, Ill. c F.o.b. Sugar Creek, Mo. d F.o.b. refinery, El Segunda. e F.o.b. Baton Rouge. f F.o.b. Wood River or Roxana, Ill. g F.o.b. Richmond, Calif. h F.o.b. Martinez. i F.o.b. refinery, Baltimore. j F.o.b. refinery, Inglewood, Calif. k 50–110 penetr. l Less than 100 penetr. m 40–80 penetr. n Tax incl. o Drums not avail. p Shipped in steel bbl. q 40–85 penetr. r In customer's drums. s Shipped in drums, per drum. t 85–300 penetr. u Per 100 gal. v Per ton. w Per gal. z Also tank trucks y F.o.b. Oakland. ^ F.o.b. refinery, Cleveland. # F.o.b. Norco, La.

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. struc- tural	SHEET PILING	STEEL RAILS— Per Net Ton			TRACK SUPPLIES—			
						Standard	Light	Re-rolled	Angle Bars	Std Spikes	Tie Plates	Track Bolts
Birmingham Area	$3.85	$3.90	$3.95	$7.85	....	$75.50	$85.00	Not	$4.925	$6.65	$4.775	....
Chicago Area	3.85	3.90	3.95	7.85	$4.675	75.50	85.00	avail-	4.925	6.65	4.775	....
Pittsburgh Area	3.85	3.90	3.95	7.85	4.675	75.50	85.00	able	4.925	6.65	4.775	$9.85
Buffalo Area	3.85	3.90	3.95	7.75	4.675	75.50	85.00	....	4.925	6.65	4.775	9.85
Cleveland	....	....	3.95	7.85	4.675	.....	.....	....	....	....	....	9.85
Youngstown Area	....	....	3.95	....	....	.....	.....	....	....	6.65	....	....
Geneva	3.85	3.90	....	....	....	.....	.....	....	....	....	....	....
Los Angeles	....	....	....	....	....	.....	.....	....	....	6.65	....	....
Pueblo	4.30	4.70	4.75	....	....	75.50	98.00	....	4.925	6.65	4.775	9.85

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price u 5 tons to carload lot b New billet	Rail steel	Add switch	$/cwt for Del.	EXPANDED METAL LATH‡ Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCINGd— Per 100 sq. ft., carload lots 4x16 in., No. 5 & 10 wires	4x12 in., No. 8 & 12 wires	6x6 in., No. 6 & 6 wires
Atlanta	$7.31	$7.11	$7.11	$.025	$...	$38.00‡	$42.00‡			
Baltimore	6.59	6.61f	....	....	....	42.00	45.00			
Birmingham	5.95	5.80	5.80	.05	.15	47.00p	52.00p			
Boston	6.56a	6.92	6.92	....	— —	39.50	43.50			
Chicago	6.10	5.33ff	5.33ff	.0625	....	46.00C	51.00C			
Cincinnati	6.54ak	6.63r	....	....	.15	38.00azee	42.00azee			
Cleveland	6.40	5.31r	....	....	....	36.50‡	40.50‡			
Dallas	9.05	7.25	7.25	....	....	49.00	52.00			
Denver	7.55	7.30e	....	— —	....	50.00s	62.00ys			
Detroit	6.42	6.62n	— —	— —	.20	53.00	58.00			
Kansas City	6.70nn	6.97	....	....	....	36.00	40.00			
Los Angeles	6.70fkk	6.57g	....	....	....	48.00	54.00			
Minneapolis	6.51kk	7.60ll	7.60ll	....	....	34.50	38.50			
Montreal	7.00xB/7.00A	4.90x	4.90g	....	....	58.00k	64.00k			
New Orleans	....	5.98ok	....	.05	....	66.00	60.00			
New York	6.77	6.71	6.71	— —	.30	38.50at	44.00at			
Philadelphia	6.42	6.67	....	— —	....	38.00‡	42.00‡			
Pittsburgh	5.80/6.00	5.80/6.00	....	— —	.10	37.60	39.60			
St. Louis	6.35a	5.95e	5.95e	....	....	50.00aa	55.00aa			
San Francisco	7.25	6.65l	....	....	....	40.50	43.50			
Seattle	4.50e	5.80el	....	— —	— —	57.00mmm	47.00mmz			

A.P.M.* Joliet, Illinois, Donora, Penn., $2.99
F.o.b. Mill: Monessen, Penn., $2.99

A.P.M.* Joliet, Illinois, Donora, Penn., $1.97
F.o.b. Mill: Monessen Penn., $1.97

A.P.M.* Joliet, Illinois, Donora, Penn., $3.14
F.o.b. Mill: Monessen Penn., $3.14

* At Producing Mill.

‡ Delivered. *b* Less than 700# add 50¢; 700–1499# add 65¢; 1500 to 7999# add 50¢. *c* 20 tons or over base. *d* Mill price plus freight. *e* F.o.b. plant. *f* Includes delivered in free delivery zone. *g* 10,000 to 39,999 lbs. *k* List price. Dominion tax exempt. Provincial and Municipal tax extra. *s* Plus Dominion, Provincial and Municipal sales tax. *j* Price per ton. *k* F.o.b. city. *l* Intermediate and hard grade, new billet. *m* Per sq. yd. *n* 5–10 tons. *o* 5 to 20 tons base. *p* Del. of 500 sq. yd. or more. *r* Std. ribbed, 4 lb. per sq. yd. *r* 5 tons or over. *s* LCL. *t* Asphalt coated. *u* Note: Revised size extra — 1 in., 1¼ in., 30¢, ¾ in., ½ in., 55¢, ⅝ in., 80¢, ¾ in., $1.10, ⅞ in., $2.20. *v* 20 tons. Straight. *w* Copper bearing. *x* 2.5 lb. per sq. yd. *y* $0.0093 transportation tax included. *z* Copper alloy. *aa* Delivered truck to job. Contractor to do unloading. *dd* F.o.b. dock. *ee* F.o.b. cars. *ff* Carload lots. *gg* Including sales. *kk* 10,000–19,999 lbs. *ll* 5 to 8 tons, f.o.b. city. *mm* 2% off for cash. *nn* 1–5 tons. *ii* 10 tons to CL. *a* 2000–9999 lbs. *A.* Amer. struct'l shapes. *B.* Canadian shapes. *C.* Deliv to contractor.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE Per net ton f.o.b. 6 in. to 24 in.a	ASBESTOS CEMENT PIPE per lin. ft., f.ob. city 6" Pr. Cl. 150	12" Sew Cl. I	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 ins ds.	CLAY DRAIN TILE ASTM C4-24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: *ASTMC 14-41 12 in.	24 in.
Atlanta	$101.00	$1.44	$2.42	$ .545	$1.27	$4.82	$12.925	$248.00	$356.00	$1.23	$2.62
Baltimore	121.50	1.46	2.42	.518	.999	4.095A	11.1725A	178.20	274.80	.95	2.60
Birmingham	101.00	1.44	2.42	.42	.75	2.99	....	250.00‡	375.00‡	1.25m	2.75m
Boston	113.00	1.46	2.20	.553uxz	1.0665uxy	4.41uxy	11.90uxy	187.80x	289.20x	1.62mg	3.95mg
Chicago	107.00	1.44	2.20*	.70m	1.35m	5.62m	13.50m	150.00‡	270.00‡	.80	2.80
Cincinnati	106.00	1.46	2.29	.581y	1.120y	4.41y	11.375y	164.40	254.10	.75m	2.80m
Cleveland	108.00	1.46	2.29	.49x	999x	3.96x	10.66x	158.00m	245.65m	.75m	2.95m
Dallas	112.00	1.46	2.54	.436	822	3.234b	9.175	.....	.....	.49	1.60
Denver	115.00	1.55	2.54	.43dd	.74dd	3.18dd	....	.....	.....	.74m	2.50m
Detroit	108.00	1.46	2.29	.72	1.39	5.58	14.91	240.00m	360.00m	.80	3.20
Kansas City	113.00	1.46	2.29	.53	.945	3.87	10.60	250.00	80.00	.70g	3.00g
Los Angeles	133.00	1.53	2.29	.51f	1.07f	5.24f	13.06f	228.20f	348.90f	.95	2.75ff
Minneapolis*	112.00	1.50	2.42	.72mo	1.32mo	5.32mo	....	.....	.....	1.38k	3.93k
Montreal	110.00	....	....	.85z	1.50z	5.25z	8.50z	.....	.....	1.17j	3.11j
New Orleans	101.50	1.44	2.42	.513	.93	5.15	....	265.00bb	455.00bb	.65	2.29
New York	111.35	1.46	2.20	.62	1.20	4.81	12.60	.....	.....	1.15	2.75
Philadelphia	110.00	1.44	2.20	.65	1.25	4.95A	12.65A	300.00‡	350.00‡	1.55k	3.75k
Pittsburgh	110.00	1.46	2.20	.428m	.794m	2.97m	7.92m	149.00	232.00	1.05k	2.50k
St. Louis	112.00	1.46	2.29	.51	.93	3.65	9.21	160.00l	360.00l	1.20il	2.70il
San Francisco	127.00	1.55	2.29	.61d	1.20d	5.03d	12.57d	240.00l	400.00l	.73	3.02
Seattle	124.00	1.55	2.42	.51b	.91b	....	....	150.00e	.....	.85ee	2.55ee

*WROUGHT STEEL PIPE—(Full standard weight) Discount from list, see footnote

Mill	Butt Weld† Black %	Butt Weld† Galv. %	Lap Weld† Black %	Lap Weld† Galv. %
Lorain, Ohio	39 25	25 50	33 0a	15 25a
Aliquippa, Pa	40 0	22 50	33 0a	10 75a
Sparrows Pt., Md	38 0	22 25	28 0a	....
Benwood, W. Va	40 0	21 75	34 75c	16 0c
Youngstown, O.	40 0	23 25	....	....
Indiana Harbor, Ind.	39 0	22 25	32 0ab	14 75a
Sharon, Pa	39 25	22 50	30 25a	13 00a
Wheatland, Pa	39 25	22 50	30 25a	13 00a
Etna, Pa	39 25	21 00bj	29 50c	10 75c
Fontana, Calif.	27 0b	13 25b	19 0ab	4 75ab

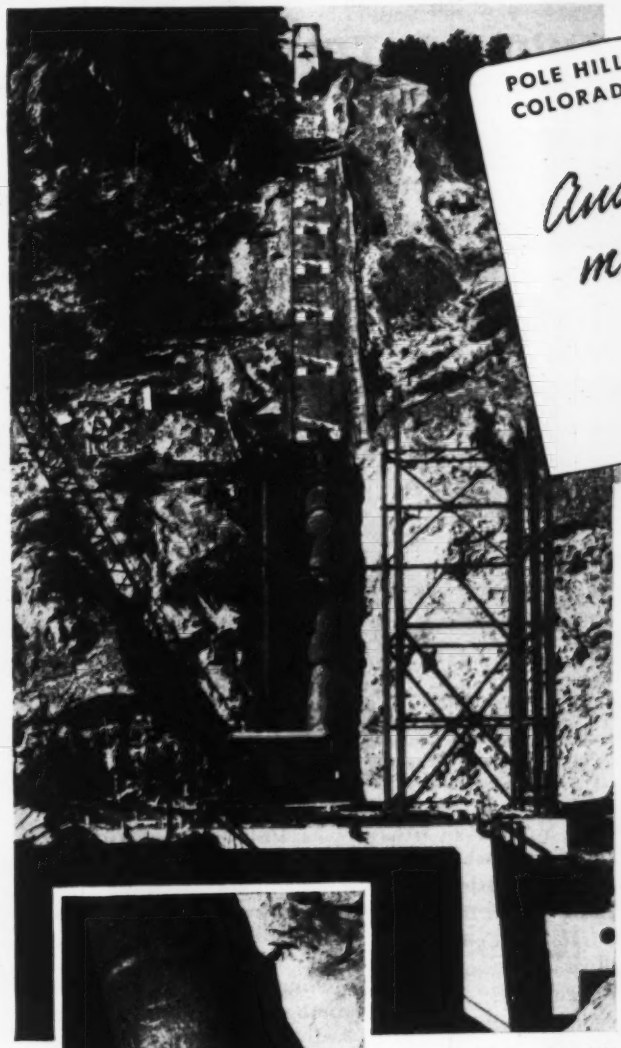
‡ Delivered. *a* Class B & heavier. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $7 per ton additional. 30 in. and larger, usually, $1 per ton less. *b* Extra strength ASTM C 200–44T. *c* 4-in., $90. *d* 88361-A. *e* 30-in. *f* F.o.b. factory. *g* Culvert pipe. Reinforced, ASTM C76–41. *h* Reinforced, ASTM C75–41. *i* Reinforced, ASTM C76–37. *j* Centrispun. No. standard specifications in Can. *l* F.o.b. plant. *m* Truck delivery. *o* Listed price is based on LCL (no minimum). *p* Less than 5 tons, per price per ft. *t* Within switching limits. *u*ASTM C13–40. *v* C.L.f.o.b. origin, freight allowed. *x* 2 ft. lengths. *y* 3 ft. lengths. *z* CESA A 60–1941 specifications used. *aa Extra strength ASTM C–200–50.* A standard strength. * 6", $1.67 per ft.; carlots, F.o.b. track Class 150. *bb* Freight allowed to destination in city. *cc* Truck loads; f.o.b. plant, Newton. *dd* LCL delivered, f.o.b. truck. *ee* 1% off for cash. *ff* 21.

* WROUGHT STEEL PIPE: List prices per ft. (based on approx. $200 per net ton): *Butt Welds* ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap Welds* 3½ in., 92¢; 4 in., $1.09, 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as wrought steelpipe, but add following "discounts." to get Pittsburgh mill price: Discount (*added*) to list for Pittsburgh base. *Butt Weld* — 1 in. black, + 25.75, galv. + 57.0; 1¼ in. black, + 25.75, galv. + 56.5, 1½ in. black, + 19.25 galv. + 52.75; *Lap Weld* — 2½ in. to 3½ in. black + 26.25, galv. + 55.5; 4½ in. to 8 in. black + 23.0, galv. +50.75. Add freight rates plus 3% transportation tax to get destination price.

Deduct discounts shown above from the following standard list consumers carload prices to get mill price.

† Threaded and coupled. *a* 3½ to 4 in. weld. *c* 5 and 6 in. *b* Continuous



POLE HILL, COLORADO

Another Penstock job made easier with

DRESSER COUPLINGS

Lighter, high-tensile steel pipe saves tonnage, cuts shipping costs, speeds installation of Pole Hill penstock.

A part of the Colorado Big Thompson Project, the 98" Pole Hill penstock carries water to a power house near Loveland, Colorado. The bed for this penstock is on a 34° slope, much of which was cut out of solid rock. To make this difficult construction job easier and more economical, U. S. Bureau of Reclamation engineers specified a Dresser-Coupled installation.

Dresser Couplings permit the use of high-tensile steel pipe. Thinner pipe walls *save up to 25% of total penstock weight.* Longer pipe lengths mean fewer joints and fewer anchors to prevent progressive creep. High-tensile steel pipe can be Dresser-Coupled with a minimum of time, skill and heavy equipment. The "give and take" in Dresser Couplings eliminates all problems of expansion and contraction. Permanent, bottle-tight joints are assured.

Weeks, sometimes months, are saved in Dresser-Coupled penstock installations. The net result—*earlier revenue* from plant operation, *continued revenue* from a permanently tight, maintenance-free line.

Above—Requiring no special supports, this portion of penstock will be back-filled after field coating is applied.

Left—98" O.D. Dresser Coupling nearest powerhouse . . . shop-tested to withstand 675# psi.

BE SURE you get a *better, faster* penstock installation. Put high-tensile steel pipe and Dresser Couplings in *your* specifications.

DRESSER®

COUPLINGS

Dresser Manufacturing Division
(One of the Dresser Industries)
319 Fisher Avenue, Bradford, Pennsylvania

FREE ENGINEERING DATA

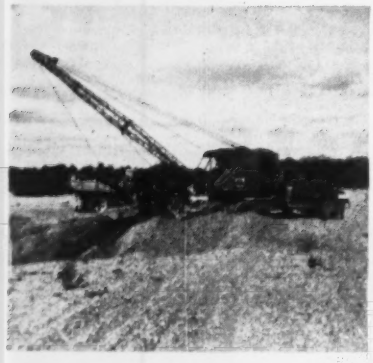
Mail this coupon for interesting and informative engineering data on diversified Dresser installations. It's file material that will be a big help next time you're designing a pipeline.

DRESSER MANUFACTURING DIVISION
319 Fisher Ave., Bradford, Pa.

Please send me your latest "Report of Dresser-Coupled Lines", and copies of your Expansion Joint and Style 38 Catalogs.

Name_____
Title_____
Company_____
Street_____
City_____ Zone_____ State_____

ONE BANTAM® FEEDS TWO 30-TON BATCHERS



Small pit averages 810 truck loads per week

WAVERLY, OHIO — Working 24 hours a day, 5 days a week, one ⅜-yd. Bantam dragline, owned by A&W Gravel Co., has loaded out an average of 810 truck loads of gravel each week during the past *9 months.* Bantam keeps 7 big dump trucks rolling 'round the clock on 2-mile round trip haul between pit and new 12 x 24 rock crusher.

115 yds. in 1 hr.!

"In one instance", owner Charles Armstrong reports, "Bantam handled *42 truck loads in 2½ hours,* averaging 11 buckets per truck every 3 minutes — for an hourly average of approximately 115 cu. yds."

Armstrong says his *18-year-old brother* operates the machine and finds it "perfect" from the standpoint of speed, endurance and low maintenance. Repair costs to date have been confined to *one cable replacement,* even though this Bantam has worked the *equivalent of 27 months of normal dragline service.*

Smart Canadian contractor utilizes economical Bantam method to cut concrete costs on big bridge job

Truck-mounted Bantam clamshell with 35' boom delivers steady supply of sand and stone to 2 compartments in each batcher.

HALIFAX, NOVA SCOTIA — To speed construction of approaches for the new mile-long Halifax-Dartmouth bridge, being built across famous Halifax harbor, *McDonald Construction Co.* of this city is using two high-speed Schield Bantam truck cranes. One Bantam, equipped with clamshell (illustrated), is loading two 30-ton Lo-Bin batchers, which supply a pair of 16S concrete mixers, delivering a total of *30 cu. yds. of concrete per hour.* Job-mixed concrete is then poured directly into bridge forms by a larger ¾-yd. crane, thus providing a completely portable field set-up that is *fast, dependable and extremely economical to operate.*

Unloads materials

A *second* Bantam crane, brought in by McDonald, is unloading heavy granite facing stone from railroad cars to trucks. Same Bantam also hustles from one point to another, handling reinforcing steel, and performing numerous other crane jobs usually entrusted to larger, more expensive machines.

Cuts job costs

On this job—like thousands of others around the world – Bantam's 6-ton crane capacity, combined with its fast line speeds, maneuverability and low operating costs, are providing increased efficiency and economy, which can not be obtained by any other equipment method.

SB-E-2

"There's a place for a Bantam on every job . . . large or small"

Whether you are a small operator, or a big-time general contractor, there are dozens of applications where you can save time and money with a high-speed Bantam shovel-crane. New heavy-duty Bantam T-35 is *heavier, tougher* than its famous "M-49 brother" illustrated above . . . gives you 6-ton crane capacity, plus 8 fast-change attachments, for year-'round earnings. Write today for free demonstration and new descriptive Bantam literature.

SCHIELD BANTAM CO., 201 Park St., Waverly, Iowa

World's largest producer of truck-mounted cranes and excavators

New Bantam T-35 Crane sells for less than $6300.00

(plus truck and mounting charge)
F. O. B. Waverly, Iowa

Includes Basic machine, std. 25' boom, 12" block, 2 part line, and extra cwt. Dragline and Clamshell attachments for use with Bantam Crane available at slight extra cost. (Price subject to change).

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F. O. B.

SHORT LEAF YELLOW PINE AND DOUGLAS FIR

All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)

All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1 Lengths up to 20 ft.

(Prices in italics)

	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh
Atlanta	† **$79.00**	**$82.50**	**$73.50**	**$76.00**	**$79.50**	**$83.00**	**$81.00**	.....	.....
Baltimore	* **91.50**	**92.50**	**75.00**	**75.00**	**75.00**	**80.00**	**111.50**		
	103.00g	*103.00g*	*98.00g*	*98.00g*	*98.00g*	*98.00g*	*102.50*	*$118.00*	*$118.00*
Birmingham	† **80.50**	**82.50**	**70.50**	**80.50**	**83.50**	**85.50**	**95.50**	.....	.....
	88.50	*83.50*	*77.50*	*79.50*	*78.50*	*78.50*	*83.50*	*85.50*	*85.50*
Boston	**99/105a**	**103/109a**	**94/100***	**95/105***	**97/107a**	**100/102a**	.....	.....	.....
	*94.00**	*94.00*	*90/100*	*90/100*	*90/100*	*90/100*	*108.110*	*108/110*	*113.00*
Chicago	** **99.00**	**104.00**	**91/92**	**99.00**	**100/101**	**105.00**	**104.00**	.....	.....
	98.00	*100.00*	*101/102*	*105.00*	*106/107*	*107/108*	*108.00*	*108.00*	*108.00*
Cincinnati	* **99.00**	**105.00**	**88.00**	**98.00**	**105.00**	**110.00**	**122.50**	.....	.....
	115.00	*115.00*	*117.00*	*115.00*	*117.00*	*115.00*	*145.00*	*145.00*	*145.00*
Cleveland	** **94.00**	**96.00**	**87.00**	**93.00**	**99.00**	**102.00**	.....	.....	.....
	.....	.....	*100.00*	*101.00*	*101.00*	*101.00*	*118.00*	*118.00*	*118.00*
Dallas	k† **78.00**	**80.00**	**69.00**	**58.00**	**59.00**	**59.00**	.....	.....	.....
Denver	* *Not in stock*		*109.00*	*109.00*	*107.00*	*111.00*	*121.00*	*135.00*	*140.00*
Detroit	‡ **110.00**	**115.00**	**101.00**	**110.00**	**114.00**	**118.00**	.....	.....	.....
	101.50	*102.50*	*105.50*	*106.25*	*105.25*	*104.00*	*118.75*	*122.50*	*122.50*
Kansas City	* **122.00**	**122.00**	**122.00**	**122.00**	**122.00**	**122.00**	.....	.....	.....
	122.00	*122.00*	*122.00*	*122.00*	*122.00*	*122.00*	*147.50*	*157.50*	*157.50*
Los Angeles	l *96.00*	*96.00*	*96.00*	*96.00*	*96.00*	*96.00*	*114.00*	*124.00*	*114.00*
Minneapolis	# *135.00*	*135.00*	*135.00*	*135.00*	*135.00*	*135.00*	*155.00*	*155.00*	*155.00*
Montreal	*ab85.00*	*90.00*	*85.00*	*90.00*	*100.00*	*100.00*	.....	.....	.....
	175.00	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	.....
New Orleans	† **100.00**	**100.00**	**92.50**	**85.00**	**90.00**	**94.00**	**118.00**	.....	.....
	99.50	*105.50*	*112.00*	*112.00*	*110.00*	*109.75*	*110.00*	*120.00*	*110.00*
New York	³ **105.00**	**108.00**	**110/115**	**115/120**	**120/125**	**125/130**	**150/160**	.....	.....
	.....	.....	*Range from $112.00 to $117.00*				*130/145*	*144/155*	*144/155*
New York	** **92.00**	**94.00**	**80.00**	**90.00**	**92.00**	**96.00**	**125.00**	.....	.....
	96.00	*96.00*	*100.00*	*100.00*	*100.00*	*100.00*	*106.00*	*115.00*	*115.00*
Philadelphia	‡		**Range from $110.00 to $127.00**				**110/127**	.....	.....
			Range from $120.00 to $150.00				*130/140*	*150.00*	*150.00*
Pittsburgh	†		**Range from $90.00 to $95.00**			**110/120**	**110/120**	.....	.....
			Range from $110.00 to $120.00			*130/140*	*130/140*	*140/155*	*140/155*
St. Louis	*fc***107.00***e*	**110.00***e*	**101.00***d*	**111.00***d*	**117.00***e*	**118.00***e*	.....	.....	.....
	.....	.....	*112.00d*	*118.00e*	*118.00e*	*119.00e*	*165.00e*	*165.00*	*175.00*
San Francisco	*A*† *62.00*	*63.00*	*65.00*	*65.00*	*64.00*	*64.00*	*66.00*	*64.00*	*64.00*
Seattle	† *80.00g*	*80.00g*	*80.00g*	*80.00g*	*80.00g*	*80.00g*	*85.00g*	*85.00g*	*85.00g*

	LONG LEAF Y. P.		PLYWOOD	
	Merchantable grade up to 20 ft.		Rail freight increment (See note for base price)	
	2x12 Rgh	12x12 Rgh	3/8"	1/2"
Atlanta	.....	.....	$22.32	$27.24
Baltimore	**$160.00**	**$155.00**	25.92*	31.60*
Birmingham	**115.50**	**155.50**	21.78	26.58
Boston	.....	.....	25.92*	31.60*
Chicago	**132.00**	**132.00**	22.45*	27.37*
Cincinnati	**145.00**	**145.00**	25.00*	30.48*
Cleveland	.....	.....	25.37*	30.93*
Dallas	**97.00**	**98.00**	18.72	22.80
Denver	.....	.....	13.92	16.98
Detroit	.....	.....	25.00*	30.48*
Kansas City	.....	.....	16.56	20.16
Los Angeles	.....	.....	16.61*ab	20.25*ab
Minneapolis	.....	.....	19.89*	24.25*
Montreal	.....	.....	.....	.....
New Orleans	**150.00**	**148.00**	18.72	22.80
New York	**210/240**	**210/240**	25.92*	31.60*
	.....	.....	.....	.....
New York	**190.00**	**190.00**	.....	.....
Philadelphia	**210/220**	**210/220**	25.92*	31.60*
Pittsburgh	**110/120**	**115/125**	25.92*	31.80b
St. Louis	.....	.....	18.72	22.80
San Francisco	.....	.....	12.22*a	14.91*a
Seattle	.....	.....	.....	.....

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. † Deliv. to contr. CL. 1. Retail, LCL, at yard. # Retail, LCL, deliv. 2. Deliv. truck lots. 3. sod.

LUMBER: **Bold Face type, Southern Pine.** *Italics, Douglas Fir.* *a* Spruce *b* Tax exempt. *c* 5M lots. *d* 8–12 ft. lengths. *e* 8–16 ft. lengths. *f* 18 ft. or under. *g* No. 1 common. *i* 8 ft. lengths. *k* No. 3 common. *l* 8–10 ft. lengths. *n* 1/4 #1, 3/4 #2 & 1/4 #3. *A* Rail freight rate from Northwest mills to San Francisco are $11.50 to $15.00 per M ft bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock. For rough, add $3.00 to above figures.

PLYWOOD: Plyform grade Fir Plywood, 4' by 8' panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on 1", $179.00; on 1", $202.00. Exterior plyform 3/8" $199.00, 1/2" $223.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. *a* Lower rate by water shipments. *b* 50,000 lb. minimum.

* Incl. new freight rates. Rates for other cities not avail. as we go to press.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS		EXPLOSIVES
	Discounts from jobbers list, Feb. 1, 1950*a* Single or Double Thickness		Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
	A quality	B quality	
Atlanta	79%	80%	$0.2315
Baltimore	76%[d]	78%[d]	.2315
Birmingham	83%	83%	.1790
Boston	79–10%	79–10%	.2315
Chicago	78%	78%	.2315
Cincinnati	78%	78%	.2315
Cleveland	78–10–10%	78–10–10%	.2715
Dallas	75%	75%	.2390
Denver	81–5%	81–5%	.2365
Detroit	78–10–10%	78–10–10%	.2315
Kansas City	80–10%	80–10%	.2365
Los Angeles	75%	80%	.2340
Minneapolis	78–10%	78–10%	.2365
Montreal	40–25%*bc*	40–10–5%[b]	21.60*hi*
New Orleans	78%	77%	.2365
New York	82–10%[c]	82–10%	.3975*g*
Philadelphia	78%	80%	.2315
Pittsburgh	82%	82%	.2040
St. Louis	80–10%	80–10%	.2365
San Francisco	70%	70%	.2315
Seattle	75%	78%	.2340

Price of 60% Ammonia Gelatin is $0.0125 per lb. higher than 40%

Glass; a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b* Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. *c* Single thickness. *d* Discount 6/15/52.

Explosives; * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g* In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. *h* F.o.b. city per 100 lb. forcite, 40% Forcite 60%, $23.35. *i* F.o.b. Beloeil (near Montreal).

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.179	$0.2115	$0.2315
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.184 – .1915	.2165– .224	.2365– .244
Rocky Mtn. States	.184 – .1965	.2165– .224	.2365– .249
Pacific N. W. States	.1815– .194	.214 – .2265	.234 – .2465
Pacific S. W. States	.179 – .1865	.2115– .214	.2315– .2365

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	By Rail Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in.— 2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in.— 2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in.— 2-ft. from butt	6-in.	90 to 100-ft.	....	....
13-in.— 3-ft. from butt	8-in.	91 to 100-ft.	....	....
14-in.— 2-ft. from butt	6-in.	50 to 69-ft.	.80/.68	....
14-in.— 2-ft. from butt	6-in.	70 to 79-ft.	.78/.83	.93
14-in.— 2-ft. from butt	8-in.	80 to 85-ft.	.83/.93	.94
14-in.— 2-ft. from butt	8-in.	85 to 89-ft.	....	1.00
14-in.— 2-ft. from butt	8-in.	90 to 100-ft.	....	1.02

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:		6"x8"x8' Untr.	6"x8"x8' Tr.	7"x9"x8'6" Untr.	7"x9"x8'6" Tr.
Boston	Oak††[i]	....	....	....	....
	Pine[i]	....	....	....	....
New York	S. L. Sap Pine	$2.55	$4.35	$3.45	$5.45
	Mixed Oak	3.10	4.65	3.70	5.95
Birmingham	Hardwood	2.40	3.88*a*	2.85	4.58*a*
Chicago	Red Oak	....	3.60*a*	....	4.60*a*
Los Angeles	Douglas Fir	....	....	....	....
	Redwood	....	....	....	....
Philadelphia	Red Oak	2.55	3.90	3.45	5.10
St. Louis	White Oak	3.08	....	3.90	....
	Red Oak	2.98	3.67*a*	3.72	4.78*a*
	Sap Pine or Cypress	3.48*a*	....	4.54	....
San Francisco	Douglas Fir	2.20*e*	3.25*af*	2.92*bf*	4.30*caf*
Montreal	Birch or Maple	.... *h*	.... *h*	.... *h*	.... *h*

Tr.— Treated; Untr.— Untreated. *a* Creosoted. *b* 7" x 9" x 8'. *c* Empty cell. *e* Green. *f* F.o.b. cars. *h* No constant price available. *i* Not available.

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb.	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.0875
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton	25.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb.	2.10
Soda ash, 58%, in paper bags, per 100 lb. dense	1.60
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.65
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	10.85

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE — PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, In paper, Carload lot. Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$195.00	$207.00	$247.50	$327.00	$342.00	$381.50	$27.38	$27.38	$19.00	$17.50	$17.50
Baltimore	186.00	198.35	372.00	421.50	549.00	627.00	36.00[k]	41.00[k]	30.00	21.00	....
Birmingham	126.00[p]	142.00[p]	237.00[x]	284.00[p]	....	....	23.50[ff]	28.00[gg]	26.37	17.10	"
Boston	196.00†	209.00†	392.00†	383.25†	....	....	36.85[p]	39.85[p]	30.00†	28.00†	"
Chicago	135.00	145.00	280.00	....	....	....	26.00	28.00	30.80	26.00	....
Cincinnati	185.00[f]	195.00[f]	340.00[fdd]	....	....	....	34.50[j]	46.00[j]	26.37[j]	24.62[j]	....
Cleveland	172.00**	183.00**	....	....	....	....	34.50	34.50	25.50	23.50	31.00[ee]
Dallas	....	118.00	....	....	....	....	19.75	35.25	32.00	21.80	....
Denver	....	....	....	....	....	....	34.00	40.00	34.80[bb]	28.00[bb]	34.00[bb]
Detroit	127.75	136.25	255.55	....	317.25	362.60	36.60[cc]	34.60[cc]	33.50	31.50	....
Kansas City	118.50	122.50	245.00	248.00	303.50	367.00	27.50	26.50	32.00	26.00	28.50
Los Angeles	r	r	r	r	r	r	27.50§	....	34.00	34.00	35.00
Minneapolis	171.50[p]	192.50[p]	386.00[p]	192.50[wn]	....	....	32.00[np]	36.00	39.00[bb][e]	29.00[bb][d]	41.00[bb][d]
Montreal	165.00[aq]	181.00[au]	325.00[au]	....	....	....	38.50	44.00	34.80	32.50	24.60[u]
New Orleans	170.00	170.00	310.00	380.00	....	....	31.00	....	....	28.00	28.00
New York	138.70[h]	147.90[h]	203.40[ch]	221.90[hn]	....	....	35.00	....	36.00	32.00	"
Philadelphia	145.30	155.00	290.60	348.70	....	....	30.34	35.42	25.00	23.00	2.97
Pittsburgh	112.00	117.00	189.00	216.00	279.00	317.00	36.00	46.00[y]	25.00	23.00	2.97[m]
St. Louis	139.00[cc]	160.00[cc]	232.00[cc]	316.00[cc]	....	....	40.00[al]	36.00[s]	.85[aaa]	.70[aaa]	1.20[aaa][pee]
San Francisco	156.85[a]*	177.10[a]*	235.30[dda]*	....	....	....	37.00	....	26.60	26.60	2.65[m]
Seattle	223.00[cc]	230.00[cc]	....	240.00[ccw]	....	....	39.00[s]	49.00[s]	37.50[aAA]	1.45[ff]	3.90[m][AA]

† F.o.b. yard Roxbury. [a] Smooth. [b] Per 50 lb. bags. [c] 6 x 12 x 12 in -3 cell. [d] Pulverized hot. [e] 5%, 10th following month. [g] 5½ x 8 x 12. [h] F.o.b. trucks, job site N.Y.C. [j] Truck load or over. [k] $1.00 discount [l] Red face. [m] Per bbl., 180 lb. [n] 7½ x 7½ x 12. Speed title. [p] Truck lots. [q] Provincial and Municipal tax extra. [r] Not used because of earthquake danger. [s] 2% discount for cash. [t] 5½ x 8 x 11¼. [u] Tax exempt. [v] Sand lime. [w] 5 x 8 x 12. [y] Stacked. [z] Pebble lime price per 80 lb. sack. [aa] Price per sack. Lime not sold per ton. [bb] LCL. [cc] Truck delivery. [dd] 6 x 12 x 12. [ee] Pebble lime. [ff] 80% common. [gg] Select. [hh] LCL. § F.o.b. yard. [ff] Per 60 lb. sack, no incr., ton price no longer quoted. ** Warehouse delivery. * F.o.b. Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry [a]	WHITE LEAD Per 100 lb. in 100 lb. cases in oil [w]	READY-MIXED PAINT Per gal., drums Graphite [b]	Aluminum [c]	Ferric Oxide [d]	ROOFING SUPPLIES Carload lots f.o.b. factory Rolls, slate surfaced, 85-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$16.25	$27.325	....	....	....	....	....	....	....	....
Baltimore	16.00	26.95	2.65	4.10	3.22	2.50	4.17	4.17	.42	37.00
Birmingham	16.25	27.325	3.90	3.40	....	2.80	2.75	2.75[b]	....	42.00[ee]
Boston	16.00	26.95	....	....	....	2.67[qq]	2.79[qq]	2.79[qq]	.42[q]	45.70[q]
Chicago	16.00	26.95	....	....	....	2.73‡[u]	3.04‡[o]	3.04‡[o]	38.00‡[bb][r]	43.00‡
Cincinnati	16.00	26.95	....	....	....	2.66	2.66	2.66	.46[y]	46.56
Cleveland	16.00	26.95	2.40[pqq]	2.82[qq]	2.46[qq]	2.83[q]	2.83[o]	2.83[o]	.43[y]	37.00[hh]
Dallas	16.25	27.70	....	4.05	....	3.50[q]	3.75[o]	4.35[o]	.36	46.00
Denver	16.50	27.45	3.07	5.15	2.87	3.66[o]	2.61[o]	2.61[o]	.43[ff]	47.00
Detroit	16.00	26.95	2.35	3.40	2.50	2.75	2.50[f]	2.50	.51	40.00
Kansas City	16.00	27.07	....	2.71[yz]	2.65	2.50	2.50[o]	2.50[o]	.313[z]	48.00[vv]
Los Angeles	16.00	27.20	3.30*	4.50[c]	4.20[n]	2.48[z]	1.66[ee]	1	.55[z]	1 "
Minneapolis	16.00	29.88 27.07	....	....	....	2.66[idd]	2.66[kidd]	2.66[kidd]	.42[idd]	40.70[e]
Montreal	....	21.95	2.95[Dff]	4.05[Eff]	3.25[Fff]	4.85[t]	3.65[tf]	1.24[kt]	3.78[kq]	
New York	16.00	26.95	....	....	....	2.66[q]	2.66[o]	2.66[o]	.44[z]	40.70*
Philadelphia	16.00	26.95	3.25	3.65	3.15	2.54	2.94	2.94	.37	26.00
Pittsburgh	16.00	26.95	2.65	2.85	3.15	2.69	2.93[o]	2.93[o]	.33	45.00
St. Louis	16.00	26.95	....	....	....	2.50	2.50[k]	2.50[k]	.33[y]	41.70
San Francisco	16.00	27.20	2.40	....	3.40	2.95	4.00[qq]	....	.49	....
Seattle	16.00	27.45	2.96[m]	2.80[m]	....	3.58[mqcc]	3.05[kmcc]	....	.59[mcc]	52.00[jmc]

‡ Delivered. Note: Red lead in oil 50c higher than white lead in oil. [a] Red lead prices change frequently due to pig lead price changes. [b] U. S. War Dept. Spec. 3-49A. [c] ASTM Spec. D266-31. [d] 80% minimum ferric oxide. [e] 15 lb. [f] Per 432 sq. ft. [g] F.o.b. yard, Roxbury. [k] Per roll, 65 lb. [t] Net carload lot prices; Minneapolis and vicinity. [j] Asphalt pitch. [k] Per cwt. [l] Not used. [m] 1% discount for cash. [o] Per 60-lb. [p] 6-drum. [q] Per 90-lb. roll. [r] F.o.b. factory Chicago. [t] Federal tax included. [u] Per 90 lb. square. [v] Per ton. [w] Price to large paint contractors is $1.25 less. [x] Mineral surfaced. [y] 55-gallon container [z] Drums. [aa] Approximate cost per 100 lbs. [bb] Roofers coating and cement. Price per ton. [cc] LCL, truck delivery. [dd] 2% cash discount. [ee] Asphalt, in 100 lb. package. [ff] 5-gal. drums. [qq] F.o.b. factory. [AA] Incl. freight. [D, Std Black. [E Ready-mixed, [F. Over 80% ferric oxide. * Aver. wt. approx. 500 lbs. [q] Freight allowed to destination not exceeding .50 cwt.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const.
Atlanta	$2.90	$2.35	$2.60	$2.25	$2.75	$2.75	$2.90	$1.20	$1.20
Baltimore	3.20[d]	2.58	3.125[e]	2.85/3.00	2.95[e]	2.875	2.875[f]	1.565[t]	1.565[t]
Birmingham	3.00	2.24	2.65	2.16	2.52	2.75	2.80	1.225	1.325
Boston	3.08*	2.625	2.82	3.00	3.05	3.00[d]	2.95[d]	1.99*	1.99*
Chicago	3.40[k]	3.15[q]	3.20*	3.09[m]	3.43[e]	3.37[f]	3.09*	2.35[k]	2.35[k]
Cincinnati	3.12	2.625	2.815	2/2.50/3.05	2.90	2.90	2.90[c]	1.92	1.92
Cleveland	3.195**	3.20[f]	3.20[c]	3.20	3.20[c]	3.20	3.20[c]	2.45	2.45
Dallas	3.50	2.4875	2.75	2.625	3.437	2.75	2.7625	1.40	1.35
Denver	3.50	2.625	2.50	2.63	3.30	2.90	2.97	1.725	1.725
Detroit	3.18**	2.93**	3.18[m]	2.90	3.31[m]	3.05	3.00*	2.18**	2.18**
Kansas City	3.50**	2.675	2.80	2.515/2.76**	3.25	2.80	2.90	1.88**	1.88**
Los Angeles	3.175	2.57[g]	2.925[k]	2.45[g]	3.437	3.00	2.90	1.94[g]	1.94[g]
Minneapolis	3.125	2.55	2.82	2.50	2.90	2.71[n]	2.70	1.95	1.95
New Orleans	2.95	2.32	2.70**	2.50	2.625	2.65	2.65	1.30	1.30
New York	3.85[hr]	3.24[hh]	3.50[g]	3.50[g]	3.95[g]	3.795[aa][g]	3.445[hp]	2.05	2.05
Philadelphia	3.61[c]	2.90	3.32[f]	3.05/3.30	3.475[h]	3.45[c]	3.20[c]	1.75	2.05
Pittsburgh	3.40	3.00	2.875	3.00	3.15	3.35	3.00[f]	1.90	1.90
St. Louis	3.55[c]	3.75[hh]	2.90[w]	3.00	3.175	3.00[c]	2.90[g]	2.075[h]	2.075[h]
San Francisco	3.40[hk]	2.705	2.85	2.56	3.275*	3.175	3.35	1.85	1.85
Seattle	3.30	2.58	2.78	2.71	3.15	2.80	2.75	2.18	2.14
Montreal*†	1.90	1.70	1.80	1.60	1.90	1.80	1.85	1.20	1.20

* Cost of living bonus now included in basic wage. [d] Includes 5¢/hr tool replacement. † Plus 2% vacation pay.

[a] 6 hr. day. [b] 7 hr. day. [c] Incl. 3% vac. stamp fund for bricklayers; 4% for electricians plus 7½¢ WF. [d] Incl. 10¢ H&WF. [e] Incl. 6¢ H&WF. [f] Incl. 6% WF. [g] Incl. 11½¢ WF. [h] $2.45 homes & housing plus 5¢ VF. [i] Incl. 3½% WF and 15¢ PF. [j] Incl. 9¢/hr WF. [k] Incl. 7½¢/hr WF. [l] Incl. 4% VF. [m] Incl. 5¢/hr WF. [n] Incl. 6¢/hr WF. [o] Incl. 3% WF. [p] Incl. 3% WF, 3% PF. [q] Incl. 3% WF and 20¢ PF. [r] Incl. 5% W&PF, 4% VF, 1% NC. 6 PH. [s] Incl. 7½¢ H&WF. [t] Incl. 11½% WF. [u] Incl. 10¢ WF. [v] Negotiating. [w] Await. WSB appr. [x] Incl. 8% WF. [y] Incl. 7½¢ IF, 5¢ H&WF. [z] Incl. 10¢ WF, 10¢ WF, 10¢ PF & 20¢ B.F. [aa] Incl. 3% WF, 6 PH. [bb] Incl. 2½¢ H&WF. [cc] Plus 0% WF, plus travel pay per day. [dd] Plus $1/per day travel time. [ee] Incl. 10¢ WF. [ff] Eff 6/15, Carp. 2.70, Hoist Engrs. 2.57; Common labor 2.05.

MEXICO CITY PRICES

In Pesos, F.o.b. City		Apr. '53	May '53
Common Wages—Building (8 hr. day)	av. per hr.	1.06*	1.06*
Common Wages—Heavy Const. (8 hr. day)	av. per hr.	1.25*	1.25*
Skilled Labor Wages			
Carpenters (8 hr. day)	av. per hr.	2.25*	2.25*
Bricklayers (8 hr. day)	av. per hr.	2.25*	2.25*
Struct. Iron Workers (8 hr. day)	av. per hr.	1.88*	1.88*
Struct. Steel Shapes 3"-15" x 12 meters	per metric ton	1224.23	1224.23
Reinf. Steel, Corr. Rods ½" x 11 meters	per ton	1368.77	1368.77
⅝" x 11 meters	per ton	1375.50	1375.50
¾" x 11 meters	per ton	1364.35	1364.35
⅞" x 11 meters	per ton	1353.14	1353.14
1" x 11 meters	per ton	1353.14	1353.14
1" x 11 meters	per ton	1353.14	1353.14
Gravel (truck load of 3½ cu. meters Blue Gravel	per tr. load	55.00	55.00
Rose Gravel	per tr. load	52.00	52.00
Cement, Std. Port. (Tolteca)	per ton	160.00	160.00
Lumber Mex. Sacred Fir (OYAMEL)	per M ft.	750.00	750.00
1st Class Pine	per M ft.	1350.00	1350.00
2nd Class Pine	per M ft.	1200.00	1200.00

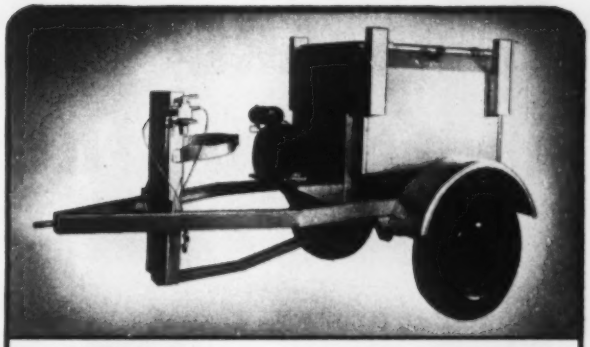
* Increase by 1/6th—work 6 days, paid for 7 days.

ENR Skilled Average: (Bricklayers, Carpenters, Iron workers): $2.979 **ENR Common Average:** $1.825

NOW...

Double the life of roads and runways! Cut sealing costs in half!

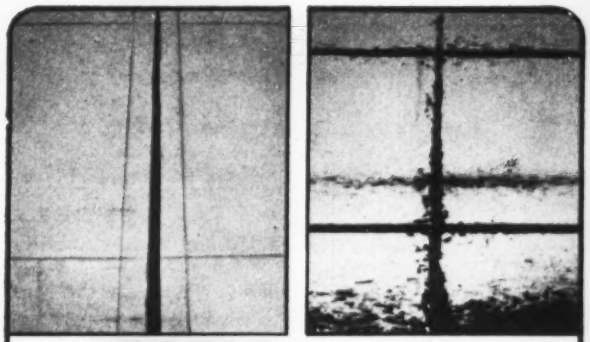
with remarkable SEALZ® Melter Unit and Compounds—proved in six years of service.



SEALZ Melter Unit—a double-walled-boiler melter specifically engineered by U. S. Rubber to complete a perfect sealing job...

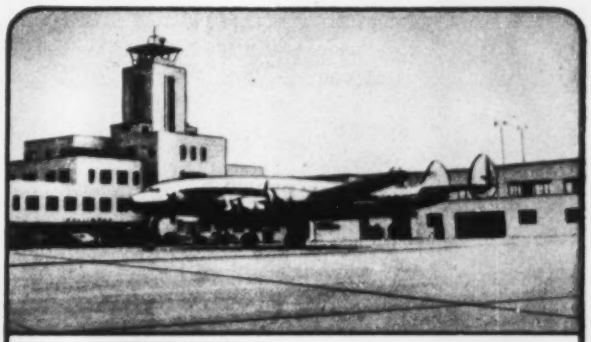
- provides continuous cycle melting at rate of 250 lbs. per hour
- thermostatic control and oil heat transfer give constant, uniform heat—eliminate material spoilage
- accepts full 50 lb. slabs—without cutting or chopping
- fired by indirect heat from liquid petroleum bottled gas
- low in weight—highly portable—economical to operate.

THIS NOT THIS



Joint SEALZ—a fast melting, hot poured rubber compound for sealing expansion joints in concrete roads...

- won't extrude in the hottest weather
- won't crack, chip, or lose adhesion in the coldest weather
- prevents water seepage
- practically eliminates maintenance
- impervious to inert, incompressible materials
- packaged in 50 lb. bags that are easily stripped and fed to melter by one man.



Aero SEALZ—a special sealing compound for airport aprons, runways, warm-up ramps...

- insoluble in all petroleum distillates
- effectively seals against jet fuels, gasoline, engine cleaning compounds
- unharmed by jet engine heats that soften or even liquefy other compounds.

SEALZ Melter Unit and Sealing Compounds meet all Federal and State Specifications. They have been proved by leading engineers and contractors, in more than six years of service, in military and civil installations, from coast to coast.

SEALZ Melters and Compounds are sold through local distributors. For more information on the advantages and use of SEALZ products, write on your letterhead to the address below.

Naugatuck Chemical

Division of United States Rubber Company
1230 6th Avenue, New York City

HERE ARE COST-SAVING IDEAS in each of these JAEGER jobs

Air-Powered Earthworms Speed Road Crossings: Two 5 hp. Ka-Mo drills, driven to meeting point from opposite sides of road, quickly tunnel for 8" gas pipeline. Jaeger Model 125 compressors operate these drills at full efficiency, which 105 ft. compressors can not do. Jaeger's 15% to 25% higher "new standard" ratings (75, 125, 185, 250, 365 and 600 cfm) give you the air you need to run all types of modern tools at full pressure and efficiency — often increase work output 30% to 40% at no increase in cost. Get Catalog JC-1.

Shorten Your Mixing Cycle, Step Up Your Yardage: By charging in 5 to 7 seconds, *and discharging in equally fast time*, a Jaeger mixer speeds up batch production, sets crews a faster pace, ends the day with extra yardage poured and placed. That's why more concrete is mixed in Jaeger's than in any other make. For full information, get Catalog M-10.

One Good Big Pump Can Lick Two Smaller Ones: This 6″ Jaeger pump is dewatering a cofferdam that proved too big a job for a pair of 4″ pumps. You know it's a Jaeger because no other pump made could throw that stream of water *and do it when running at only 1400 rpm.* That speed is mighty easy on pumps and engines. It explains why a Jaeger keeps on pumping long after ordinary pumps have broken down. Capacities to 240,000 gph. For complete information, get Catalog P-10.

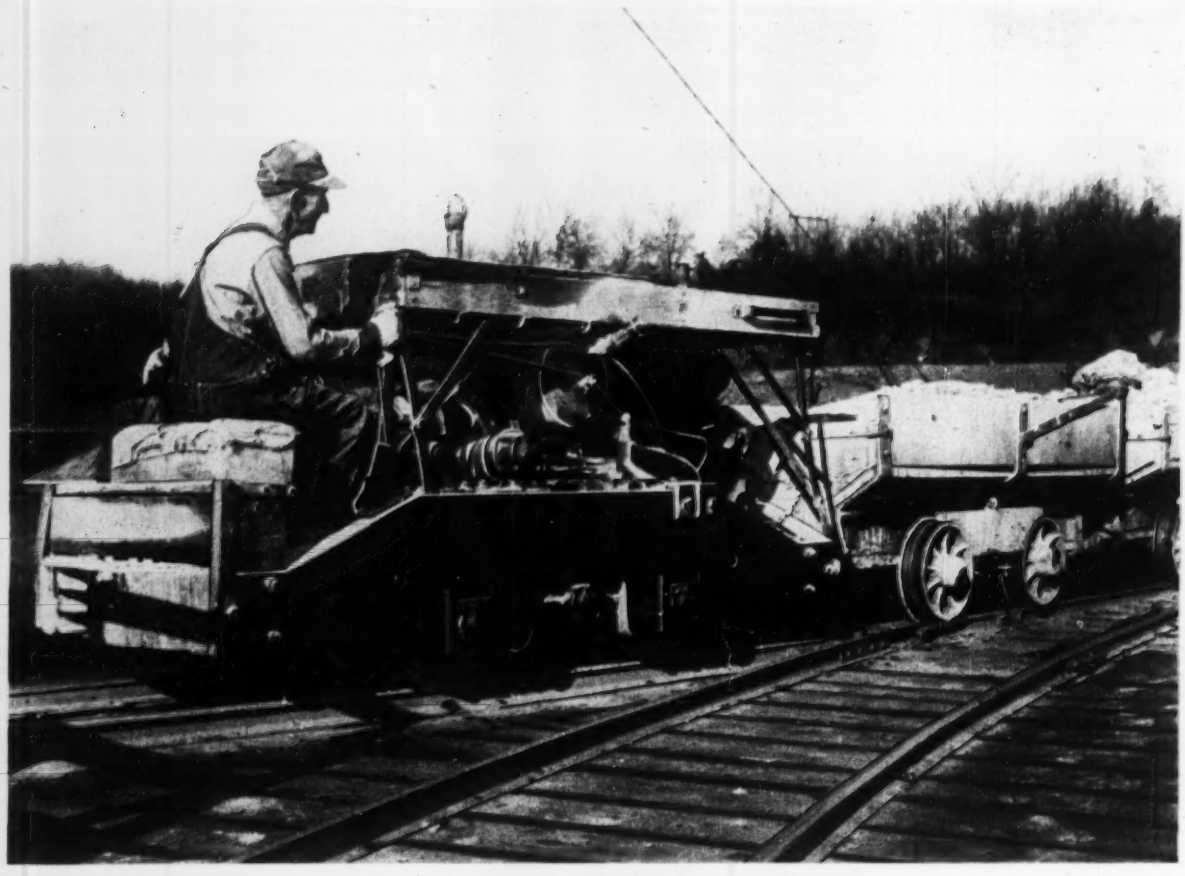
50,000 Cu. Yds. Don't Take Long — at 420 Yds. an Hour: Special strength construction, to handle the 100,000 lb. wheel loads of the biggest jet bombers, called for 11″ of densely compacted earth subgrade, 6″ of pit run gravel, 7″ of dry macadam and 8″ of bituminous top. That's a lot of material in a 10,000 ft. runway that's 200 ft. wide plus 75 ft. shoulders. To meet the rush schedule two Jaeger paver-type Aggregate Spreaders were used to lay 50,000 cu. yds. of dry macadam for the sub-base in two 3½″ courses. They paid off by placing 10 cu. yd. truck loads in about 2¾ minutes, easily doing about 210 cu. yds. per hour with each machine. For complete information, ask for Catalog SPS-1.

When you need increased production or new cost-cutting methods, talk to your Jaeger distributor. He knows the machines and methods that meet your problem best.

THE JAEGER MACHINE COMPANY

200 Dublin Ave., Columbus 16, Ohio

Sales, rentals and service in 153 cities of the U. S. and Canada and the principal cities of the world.



replaced horses 30 years ago

-still going strong!

Still operating efficiently and hauling clay 40 to 48 hours a week, this friction drive Plymouth Locomotive (the first Plymouth ever built) went to work when the dray horses were put to pasture some thirty years ago.

From the National Fireproofing Corporation, Haydenville, Ohio where this 3-ton Plymouth hauls 10,000 tons of clay per month over a 3/8 mile track, Mr. C. S. Matheny, General Manager writes, "We don't see how we could ask for anything better. Our Plymouth pulls 15 to 20 cars empty, or 6 to 8 when loaded. We've never lost time for repairs. In fact we've had mighty few repairs, and they were handled after working hours."

If you would like to trim costs and handle materials faster, better check Plymouth! A complete catalog is available describing 3-ton to 70-ton locomotives . . . gasoline, Diesel, and Diesel-electric models . . . narrow and standard gauge sizes. Send for your free copy today! PLYMOUTH LOCOMOTIVE WORKS, Division of The Fate-Root-Heath Company, Dept. A-4, Plymouth, Ohio.

PLYMOUTH LOCOMOTIVES

ALSO MANUFACTURERS OF F-R-H CERAMIC MACHINERY

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† Conn., New London—B.A. 6/9—P. Wks. Office, Building 2, Submarine Base, replace sanitary and storm sewers Bldg. 298 Area, NOY 77717, Spec. 38218.

† Me., Presque Isle—POWER DISTRIBUTION SYSTEM—B.A. 6/9—Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston, Mass., rehabilitation power distr. sys., U. S. Air Force Base, NOY 75849, Spec. 34901. Plans deposit $10.

Mass., East Boston—UTILITY EXTENSIONS—B.A. 6/9—State, Airport Management Bd., Station 21, Gen. Boutwell Bldg., Logan International Airport, East Boston, Contr. SAMB 70, constr., installation for relocation of Porter St. and utility extens. in National Guard area, Logan Airport, $80,000. Plans deposit $10, refundable. CD 4/13/48.

▲† Me., Limestone—HANGARS—B.A. 6/11—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., seven multi-purpose hangars, Limestone Air Force Base, Eng. 19-016-43-91, $1,000,000. CD 5/6.

Mass., Boston—B.A. 6/11—State, Metropolitan Dist. Comn., 20 Somerset St., Boston, Sect. 134, Framingham Trunk Intercepting Sewer, South Metropolitan System, Natick-Framingham. $750,000. Plans deposit $10, refundable. CD 5/19, under LB.

† Mass., Hingham—COMPRESSOR—B.A. 6/11—Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston, rehabilitation compressor, Bldg. 62, Naval Industrial Reserve Shipyard, NOY 77778, Spec. 36711.

† Mass., South Boston—B.A. 6/11—Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston, repairing jetties and South Pier, Boston Naval Shipyard, South Boston Annex, NOY 77752, Spec. 36690. Plans deposit $10. Bids 5/5 rejected. CD 5/11, under LB.

BIDS ASKED—BUILDINGS

Mass., Fitchburg—Y.M.C.A. BLDG.—B.A. 6/10—Fitchburg Young Men's Christian Assn., Intervale Rd. (selected list bidders) 2 story, bsmnt., 140x142 ft. Y.M.C.A. bldg., Wallace Ave. CD 3/31.

Mass., Hadley—SCHOOL—B.A. 6/11—Town, School Bldg. Comn., Roger C. Barstown, chn. Supt. Office, Hooker School, Senior-Junior High School, Hopkins Academy. $433,000. Plans deposit $50, refundable. James A. Britton, 315 Federal St., Greenfield, archt. CD 10/7.

▲ N. H., Concord—HOSPITAL—B.A. 6/16—At office Shepley, Bulfinch, Richardson & Abbott, archts., 1 Court St., Boston, Mass., hospital addn., alterations, Pleasant St., for Concord Hospital, J. Langley, pres., Concord. $3,000,000. CD 1/23.

SOON LETS CONTRACT—BUILDINGS

Conn., East Hartford—FACTORY—Pratt & Whitney Aircraft Co., c/o C. Allen Smith 400 Main St., soon lets contract Willgoos Turbine Factory Extension, Main St.

▲ R. I., Providence—HOSPITAL—Rhode Island, L. C. Gerry, chn. Bldg. Comn., 593 Eddy St., soon let contract, hospital, Eddy and Lockwood Sts. $7,000,000. Shepley, Bulfinch, Richardson & Abbott, 1 Court St., Boston, Mass., archts. CD 5/19.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

National Contractors, Inc., 60 State St., Boston, Mass. CA. $157,170, est. $160,000. hy. resurf., Shrewsbury.

Ralph Civitarese Co., 139 Providence St., Hyde Park, Mass. LB. $63,181, est. $60,000. Contr. 10 constr. sanitary and surface sewers, appurtenant work, Ellis Dr., Wiltshire Dr., Rollingswood Dr. and Moreland St., WORCESTER, MASS. City, City Hall, Worcester, Mass. Bids May 22. CD 5/12.

J. A. Singarella Co., 15 Bay St., Dorchester, Mass. LB $539,000, est. $500,000. Beachmont Station approaches, Revere, BOSTON, MASS. State Metropolitan Transit Auth., 31 St. James Ave., Boston, Mass. Bids May 19. CD 5/12.

RHODE ISLAND—State Purch. Agent, State House, Providence,

M. A. Gammino Constr. Co., 728 Valley St., Providence, R. I., LB. $364,451, highway, Pontiac Ave. from Reservoir to Park Aves. and from Laurens Ave. to Garden City Dr., Contr. 5303, FAS Proj. S 0304 (1), Providence and Cranston.

Fanning & Doorley Constr. Co., 274 Kinsley Ave., Providence, R. I., LB $188,283, highway, High Service Ave. and Smithfield Rd. from Spring St. to Mineral Spring Ave., Contr. 5309, FAS Proj. S-0311 (1), North Providence. Bids May 20. CD 5/6

Juno Maskell Constr. Co., 1169 Main St., East Hartford, Conn., CA, $186,468, football practice field tennis courts, roads, University of Connecticut, Proj. B/A-D-165, STORRS, CONN. State P. Wks. Comr., State Office Bldg., Hartford Conn. Bids Apr. 1, awarded May 15.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† Henry E. Wile Co., 862 Walnut St., Newton, Mass. CA. $1,133,878, est. $1,600,000. constr. Climatic Projects, LABORATORY and supplementary facilities, east side of MOUNT WASHINGTON, N. H. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Mar. 19 CD 3/18, under LB

E. Turgeon Constr. Co., 42 Weybosset St., Providence, R. I. LB. $811,734. Maternity HOSPITAL wing addn., Middle St., FALL RIVER, MASS. St. Anne's Hospital, 795 Middle St., Fall River, Mass. Bids May 21. CD 5/5

Heywood Memorial Hospital, 242 Green St., Gardner, Mass., rejected bids May 15, hospital alterations, renovations, 242 Green St., GARDNER, MASS. LB. $670,000 CD 5/20, under LB

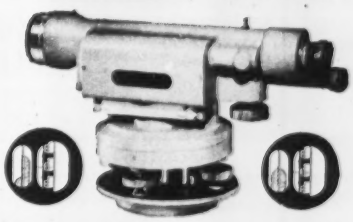
James S. Kelliher, 1245 Hancock Ave., Quincy, Mass. CA. $900,103. elementary SCHOOL, Westcott St., MALDEN, MASS. City, School Bldg. Comn., City

"6¼" TRANSIT
Preferred for Federal and Public Works, by General Engineering, Railroads and Road-Building Engineers.

"THEMI" THEODOLITE NO. 120
"Most satisfactory . . . superior workmanship," says U. S. Army Ordnance expert. SUPER-ACCURATE.

Why Surveying Experts Favor

"UNIVERSAL" WYE LEVEL NO. 100
Internal focusing telescope with 32x magnifying power. Has coated optics, like all Fennel instruments.



"NITAC" LEVEL NO. 24
World's only level with split bubble—erect image visible through direct line of sight.

FENNEL INSTRUMENTS
reflecting a century of progress

In fine instrument-making, nothing counts so much as human skill . . . and Fennel's old-world craftsmen have the skill of generations.

That is why, no matter how exacting your standards, these instruments will meet them. Proved in 58 different countries from equatorial Brazil to arctic Alaska . . . Before you decide, compare Fennel. Particulars and prices on request.

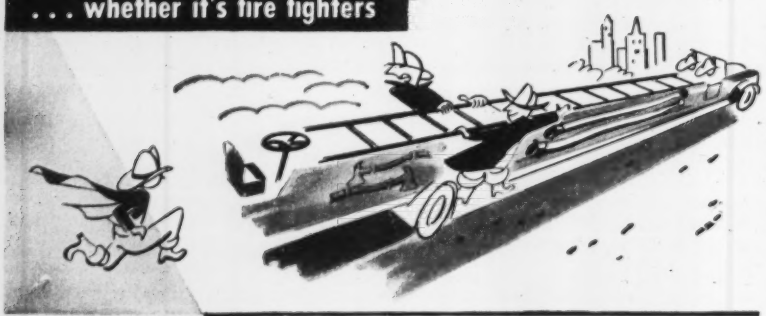
REPAIR SERVICE by Factory-Trained personnel. Surprisingly thrifty!

CONTACT THESE DEALERS
BOSTON: Modern Blue Print Co., 47-51 Cornhill Street
TRENTON: D & W Blue Print Co., 16 Perry Street
TOLEDO: The L. Beckmann Co., 1609 Canton Street
DETROIT: The Ostermann Co., 2222 Woodward Avenue
CHICAGO: Crofoot, Nielson & Co., 205 Wacker Drive
or write direct to us

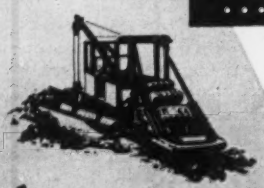
FENNEL INSTRUMENT CORP. OF AMERICA • 478 Water Street, New York 2, N. Y.

It takes a FULL team

. . . whether it's fire fighters



. . . or digging equipment



1. This is for big jobs

2. This is for medium jobs

3. Sherman for all other jobs

On many excavating jobs the use of big equipment is costly and time-consuming. The Sherman Power Digger is designed so that you get all the advantages of power digging on these jobs. Thousands of users have proved that the Sherman Power Digger reduces costs. Write today for descriptive literature C43.

Designed, Engineered and Manufactured Jointly by

SHERMAN PRODUCTS, Inc.
Royal Oak, Michigan

WAIN-ROY CORPORATION
Hubbardston, Mass.

•

Patent No. 2,303,825
Other patents pending

Sherman

PRODUCTS, INC.
ROYAL OAK, MICHIGAN

Sherman SP Products

Diamond Core

Drilling

CORE BORINGS for Foundations, Dams, Bridges and all Heavy Structures
GROUT HOLES

Tinney Drilling Co.
Grafton, W. Va.

Get the FACTS!

For good living near the job, Schult offers BIG VALUE. For information, write now. Dept. 6406.

SCHULT CORP.
ELKHART, INDIANA

Hall, Malden, Mass. Bids May 11, awarded May 18. CD 5/15, under LB.

▲ **Tredennick-Billings Co.**, 10 High St., Boston, Mass. CA. Est. $1,500,000. PLANT addn., Nichols Ave., WATERTOWN, MASS. Hood Rubber Co., Div. B. F. Goodrich Co., 36 Nichols Ave., Watertown, Mass. Anderson-Nichols & Co., 150 Causeway St., Boston, Mass., engrs.

City, Bureau Purchase, 200 Orange St., New Haven, Conn. rejected bids Apr. 9, POLICE ACADEMY and GARAGE Sherman Parkway, NEW HAVEN, CONN. LB, $423,500. CD 4/15, under LB.

Anderson-Fairoaks Constr. Co., 141 S. Marshall St., Hartford, Conn., CA, $930,000, MR-50 moderate rental HOUSING, WILLIMANTIC, CONN. Willimantic Housing Auth., 49 West Ave., Willimantic, Conn. Bids May 18. CD 5/22, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. J., Atlantic City—GYMNASIUM—B.A. 6/9—Bd. Educ., Tennessee and Atlantic Aves., gymnasium at Texas Ave. School $75,000 H. A. Stout & Son, Guarantee Trust Bldg., archts.

N. Y., New York—B.A. 6/15—President Manhattan Boro, Municipal Bldg., Zone 7, Harlem River Drive Improvement, E. 125 St. to Harlem River Driveway, Contr. No. 146, constr. viaduct connection between northbound roadway of Franklin D. Roosevelt Dr. and Willis Avenue Bridge, etc. Plans deposit $25.

N. Y., Perry—B.A. 6/15—Village Bd., Village Hall, water treatment plant, 1.5 m.g.d. rapid sand filter plant with pre-treatment unit and low lift pump station, Plans deposit $10; water treatment plant outfall sewer, constr. Sect. B, approx. 3,000 ft. 12 in. and 85 ft. 8 in. outfall sewer, appurtenances, Plans deposit $5. William S. Lozier Co., 10 Gibbs St., Rochester, Zone 4, engrs.

† **N. J., Wrightstown**—B.A. On Or About 6/25—U. S. Eng., 121 N. Broad St., Phila., 1, Pa., imprvs. water distr. sys., McGuire Air Force Base, ENG-36-109-53-750. CD 5/13, under LB.

† **N. J., Palermo**—ELECTRICAL DISTRIBUTION SYSTEM—B.A. On Or About 6/26—U. S. Eng., 121 N. Broad St., Phila., 1, Pa. major repairs and minor new construction, modification of electrical distr. sys. Inv. No ENG-36-109-53-799.

† **Pennsylvania**—B.A. On Or About 6/26—U. S. Eng., 121 N. Broad St., Phila., Zone 1, dredging approx. 523,000 cu. yd. material, place measurement from project channel in Schuylkill River between the mouth and Passyunk Ave., Phila., Pa., Inv. No. Civ. Eng-36-109-53-61.

BIDS ASKED—BUILDINGS

Pa., Farrell—HOUSING—B.A. 6/9—Mercer County Housing Auth., Farrell, Fay Terrace Homes, 2 story, 76 unit, brick veneer, frame, Pymatuning Twp., near Greenville. $750,000. Walter Mallorie, 54 Buhl Blvd., Sharon, archt.

▲ **Pa., Phila.**—HOUSING—B.A. 6/9—Phila. Housing Auth., 42 S. 15 St., East Poplar Housing, $2,486,656, Edmond G. Krimmel, John Lane Evans, James Hatfield, Lloyd Mateus, 1701 Walnut St., archts. Bids Mar. 24 rejected, LB. $1,858,000. CD 4/6, under LB.

Md., Baltimore—SCHOOL—B.A. 6/10—City, Bureau Bldg. Constr., 410 Municipal Bldg., 3 story, L-shaped elementary school. $750,000. Plans deposit $50. Tyler, Ketcham & Myers, 513 Park Ave., archts. CD 10/15

▲ **N. Y., Queens Village**—SCHOOL—B.A.—6/16—Bd. Educ., Bureau Constr., 49 Flatbush Ave. Exten., Brooklyn, Zone 1, general constr., plumbing and drainage; heating and ventilating; electrical work and lighting fixtures for new addn. and modernization existing bldg., P. S. 135, 89th Ave. between 207th and 208th Sts., Queens Co. $1,284,480. Plans deposit $20 general constr., $6 each plumbing and drainage, $8, heating and ventilating and lighting fixtures.

Pa., Phila.—WAREHOUSE—Bids Asked—Max Felhaum & Son, Fruit Trade Bldg., warehouse and office, Dock St. $90,000

SOON LETS CONTRACT—BUILDINGS

Pa., Phila.—SUB-STATION—Phila. Electric Co., 900 Sansom St., soon lets contract sub-station, 1122 Sedgley Ave. $90,000. CD 11/7.

▲ **Pa., Pittsburgh**—PLANT—Sun Telegraph Co., Telegraph Square, soon lets contract 3 story, bsmnt., 72x108 ft., brick, block newspaper plant, Grant St. and Strawberry Way. $2,000,000. Prack & Prack, 509 Martin Bldg., archts. CD 4/2

Pa., Springdale—LABORATORY—Pittsburgh Plate Glass Co., Grant Bldg., Pittsburgh, soon lets contract 3 story, 171x167x98 ft., L-shaped, 2 story, 70x182 ft., 1 story 39x59 ft., research laboratory, pilot and pressure bldg. $500,000; Hoffman & Crumpton, 700 Century Bldg., Pittsburgh, archts., Bids Apr. 1 rejected. CD 3/19

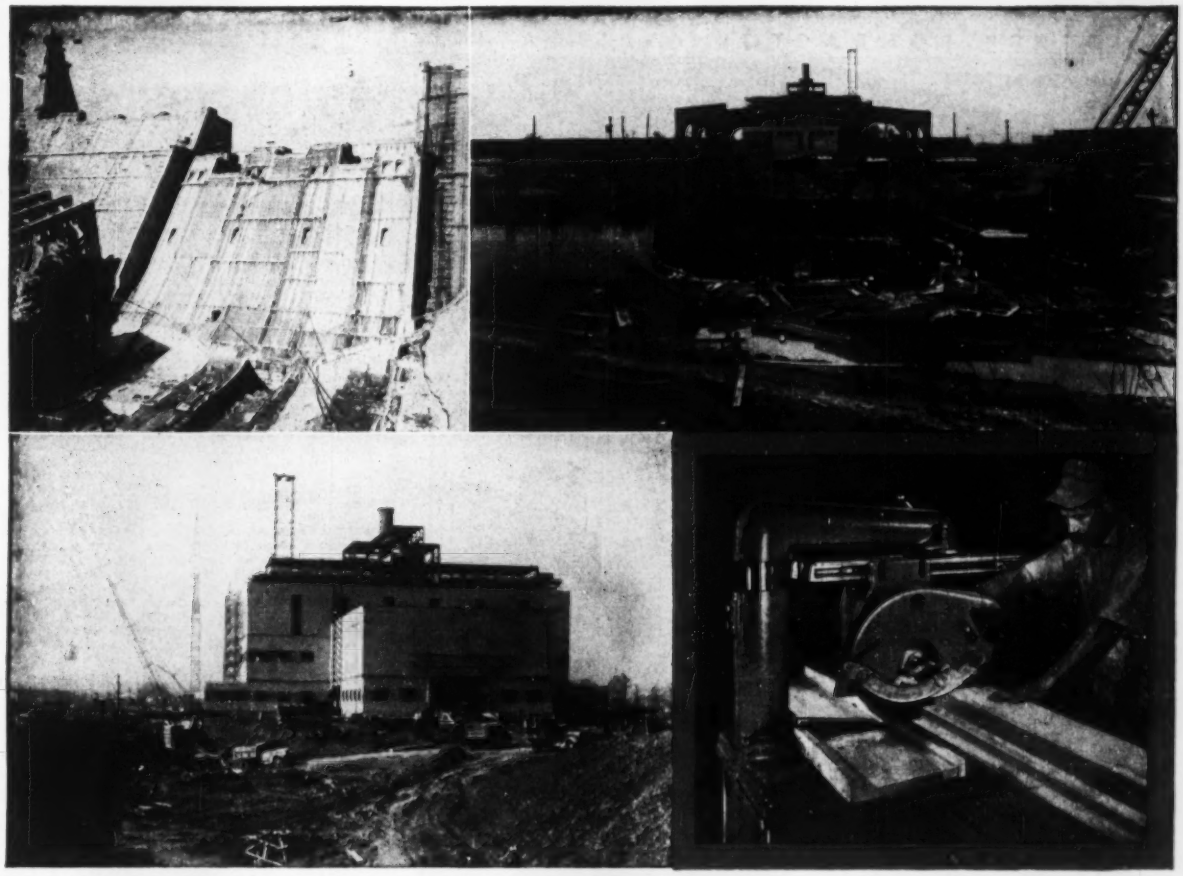
HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Parlor City Constr. Co., 411 Hooper Rd., Endwell, Endicott, N. Y., LB $277,578, est. $308,565, City of Corning: Monkey Run Conduit (flood control), F. C. 53-1, Steuben Co., NEW YORK. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Bids May 21. CD 4/28.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, **Weber Constr. Co., Inc.**, 133 Wall St., Schenectady,

(Continued on page 116)



On projects like these **DELTA** Radial Saws save Hunkin-Conkey thousands of dollars

Delta saws do the work of ten men in cutting—yet actual machine cost is less than 30 cents an hour.

A battery of Delta Radial Saws for on-the-job use at construction projects is chalking up annual savings running well into five figures, says Hunkin-Conkey Construction Company of Cleveland, Ohio.

Several of these saws have been in regular use, averaging more than 6 hours per day, for better than 10 years. There's been practically no maintenance—and at actual machine cost, except labor, of less than 30 cents an hour. They do more accurate work than other saws, do it much faster. Workers like the Delta saws for their ease of operation and their excellent safety features.

Savings like these are possible with the new Delta radial saw because of its many exclusive "extras"—rugged construction, 360° turret action, easy-to-reach up front controls—and many others.

For full information consult your Delta dealer (he's listed in the classified telephone directory under Tools) or write Delta Power Tool Division, Rockwell Manufacturing Company, 688F N. Lexington Ave., Pittsburgh 8, Pa.

MACHINE COST LESS THAN 30¢ AN HOUR

Based on 6 hours operation per day or 1500 hours a year, hourly saw cost figures just under 30 cents, as follows:

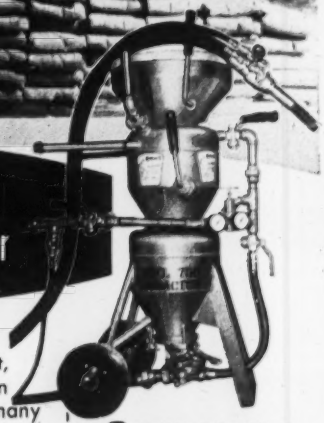
	Per Year	Per Hour
Depreciation 10% and average interest 2% on Delta 16" Radial Saw	$75	$ .05
Maintenance and Repairs (average of 7 saws)	30	.02
Saw blade depreciation	36	.024
Saw sharpening, 3 16" blades per week	150	.10
Power cost, 7½ H.P. motor		.10
Total machine cost per hour		.294

DELTA MILWAUKEE **DELTA QUALITY MAKES THE DIFFERENCE**

DELTA QUALITY POWER TOOLS
Another Product by **Rockwell**

ANOTHER BONDACTOR APPLICATION

BONDACTOR
Guns Concrete Better . . . Faster



Makes and Saves Money For You

BONDACTING is the modern, efficient, low-cost answer to many construction and maintenance problems. In many cases, as in concrete build-up work, BONDACTING is the *only* practical solution. Own your own BONDACTOR. Do your own gunning of concrete, refractories, and other cementitious materials. You'll save time, you'll save labor—and you'll keep the profits.

Typical BONDACTOR Jobs

Here are just a few of BONDACTOR'S many money-making applications:
• Precast Concrete Wall and Roof Fabrication • Dry Wall Construction • Tank and Reservoir Lining • Refractory and Insulating Concrete • Steel Encasement • Fireproofing • Waterproofing • Pipe Grouting • Wet or Dry Sandblasting.

3 BONDACTOR Models Available

Model 750. Capacity: ½-¾ cu. yd. per hr. Operates with 75 or 105 CFM compressor.

Model 1250-S. Capacity: ¾-1½ cu. yds. per hr. Operates with 105 CFM compressor.

Model 1250-L. Capacity: 1½-3 cubic yds. per hour. Operates with 210 CFM compressor.

Capacities vary with material being gunned and with specific operating conditions.

WRITE TODAY FOR COMPLETE INFORMATION

PLEASE STATE INTENDED USE AND MATERIALS TO BE AIR PLACED.

AIR PLACEMENT EQUIPMENT COMPANY
1007 W. 24th St.
Kansas City 8, Mo.

GUNITE
PNEUMATICALLY PLACED CONCRETE
DENSE · DURABLE · HIGH STRENGTH
for
Restoring Disintegrated Concrete
Dam, Dock and Bridge Repairs
Steel Encasement and Fireproofing
Sewer, Water Pipe and Penstock Linings
Stack and Bunker Linings
Wood Pile Casings—Pressure Grouting
Prestressed Tanks and Silos
Get in touch with us for engineering data and estimates
GUNITE CONSTRUCTION CORPORATION
420 LEXINGTON AVE., NEW YORK 17, N.Y.
MURRAY HILL 3-7699

New Transits and Levels by Experts

Each Buff is dependable, accurate and economical.

Send for catalog #329.

Headquarters for Repairs

Every make of instrument, renewed by Skilled Workmen.

Our Shops are located at Jamaica Plain, Boston, Mass.

Buff & Buff Mfg. Company
HENRY A. BUFF, *President.*

(Continued from page 114)

N. Y., LB **$893,662,** est. $1,072,000, New York State Thruway Mohawk Sect. Sub. 1 (D. & H. R. R. and N. Y. C. R. R.) 0.37 mi. Cont. M. T. 53-9, Schenectady Co.;

Horn Constr. Co. Inc., N. Hewlitt Ave., Merrick, N. Y. LB **$407,868,** est. $435,000, Brooklyn Queens Expressway (Cont. 17), 0.36 mi. Cont. F. A. BQE. 53-1, Kings Co.;

Camarco Contractors, Inc., State Rd., Carmel, N. Y. LB **$924,616, est. $947,000,** Pawling Village; S. H. 5009, Pawling-Dover Town Line S. H. 612, Dover Plains-Pawling Town Line, Pt. 2, S. H. 5326, 3.25 mi. FARC. 53-33, Dutchess Co.;

Hendrickson Bros., Inc., 63 N. Central Ave., Valley Stream, N. Y., LB **$974,754,** est. $1,233,000. Huntington Town Line, Farmingdale, Pt. 1, SH 1218, Huntington-Amityville, Pt. 1, SH 794, 2.95 mi. FARC 53-38, Suffolk Co.;

Matthew DeGroot, Jericho, Vt., LB **$420,316.** est. $424,000, Elmdale-Gouverneur, S. H. 875, 0.75 mi. FARC. 53-28, St. Lawrence Co.;

Dalrymple Gravel & Contg. Co., 105 E. Chemung Pl., Elmira, N. Y., LB **$450,048,** est. $493,000, Elmira City: Madison Ave. and Lake St. (E. Water St.-Linden Pl.) 1.02 mi., FARC. 53-13, Chemung Co.;

S. A. Scullen Co., 6 Second St., Waterford, N. Y., LB **$921,513,** est. $1,065,000, Utica City: North-South Arterial (Horatio St.) Horatio St. Ext. Deerfield Cors.-Marcy Hill, S. H. 933, 2.71 mi. FAC 53-12, FASH 53-9, FARC. 53-40, Oneida Co.;

Asphalt Roadways Co., 1766 Main St., Buffalo 8, N. Y. LB **$484,134,** est. $608,000, Alexander-Canawaugus Pts. 4, 5, 6, and 6A, S. H. 8471, 8490, 1957, 8504, 12.2 mi. FARC. 53-39. Genesee and Livingston Counties. Bids May 21. CD 4/28.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, cancelled bids to have been opened June 11, c. conc. 8.67 mi. b. conc. Type 1A, opt 0.62 mi. T. C. graded grav. (D. S. T.) 0.7 mi., misc. work 0.07 mi., 7 Hy. Seps. Comp. I-beams, 236.4 ft., 145.9 ft., 137.9 ft., 221.3 ft., 146.6 ft., 198.3 ft., and 209 ft., 6 bridges closed boxes 34.3 ft., 35.1 ft., 30.6 ft., 20.3 ft., 24.4 ft. and 25.3 ft., 6.36 mi. Thy., 3.7 mi. Acc. New York State Thruway Mohawk Sect.-Sub. 9 (Utica- West City Line-Burch Creek); No. Genesee St. Interchange; Horatio St. S. H. 1517 Connection; Leland Ave. and Schuyler Dyke Rd. (Co. Rd. 37) Contr. No. M. T. 53-11. S. T. 53-24, Herkimer and Oneida Counties. **$6,504,000.** Will re-advertise. CD 5/20.

▲ **S. A. Healy Co.,** 61 Westchester Ave., White Plains, N. Y., CA. Est. **$13,000,000** (Subject to special arrangement), Contr. No. 3, Long Island Intercepting Sewers, Bowery Bay Sewage Treatment Works Exten., Queens Boro, ASTORIA, N. Y. Dpt. P. Wks., Municipal Bldg. New York 7, N. Y. Bids Apr. 1. CD 3/25.

Shanahan Constr. Co., Inc., 109 Canal St., Ellenville, N. Y., LB. **$710,130,** Contr. 12A; Northside Intercepting Sewer and river crossing, BINGHAMTON, N. Y. Bd. Contr. & Supply, Municipal Bldg., Binghamton, N. Y. Bids May 6. CD 5/1.

NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

C. F. Malanka & Sons, Inc., 1317 Bergenline Ave., Union City, N. J., LB. **$806,288,** Sect. 38A, paving Hackensack River Bridge approaches 1.085 mi. Rte. 25 (1927) Rte. U.S. 1 and 9--Truck (1953) in Town of Kearny and City of Jersey City, Hudson Co. Bids May 19. CD 4/30.

▲ **NEW JERSEY**—New Jersey Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

S. J. Groves & Sons Co., P.O. Box 85, Woodbridge, N. J., CA. **$1,135,057,** Contract No. 96, grading, drainage for 11 mi. Garden State Parkway from Westecunk Creek to Oyster Creek, Ocean Co. Bids May 4. CD 5/13, under LB.

▲ **NEW JERSEY**—New Jersey Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

Geo. M. Brewster & Sons, Inc., 275 W. Fort Lee Rd., Bogota, N. J., LB. **$1,320,816,** grading, drainage 7.9 mi. Garden State Parkway from Route 30 Interchange to Mullica River Interchange, Contract 32, Atlantic Co. Bids May 18. CD 4/29.

▲ **NEW JERSEY**—New Jersey Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

Franklin Contg. Co., 12 Central Ave., Newark, N. J., CA. **$807,945,** Contract 38, bridges for Garden State Parkway at Red Hill Rd., Nut Swamp Rd., W. Front St. and Earle Ammunition Depot, Holmdel and Middletown Twps., Monmouth Co.;

Poirier & McLane Corp., 133 W. 42 St., New York, N. Y., CA. **$1,297,259,** Contract 40, bridges for Garden State Parkway at Swimming River, Pine Brook, Newman Springs Rd., Tinton and Sycamore Aves., Middletown Twp. and New Shrewsbury, Monmouth Co. Bids Apr. 30, awarded May 19. CD 5/5, under LB.

▲ **NEW JERSEY**—New Jersey Hy. Auth., State Hy. Dpt. Office Bldg., 1035 Parkway Ave., Trenton,

Poirier & McLane Corp., 33 W. 42 St., New York, N. Y. LB. **$2,667,446,** Contract 17, grading, drainage structures, paving for Section 7 of Garden State Parkway from Raritan River bridge to existing Route 4, Woodbridge Twp., Middlesex Co.-Bids May 21. CD 5/4.

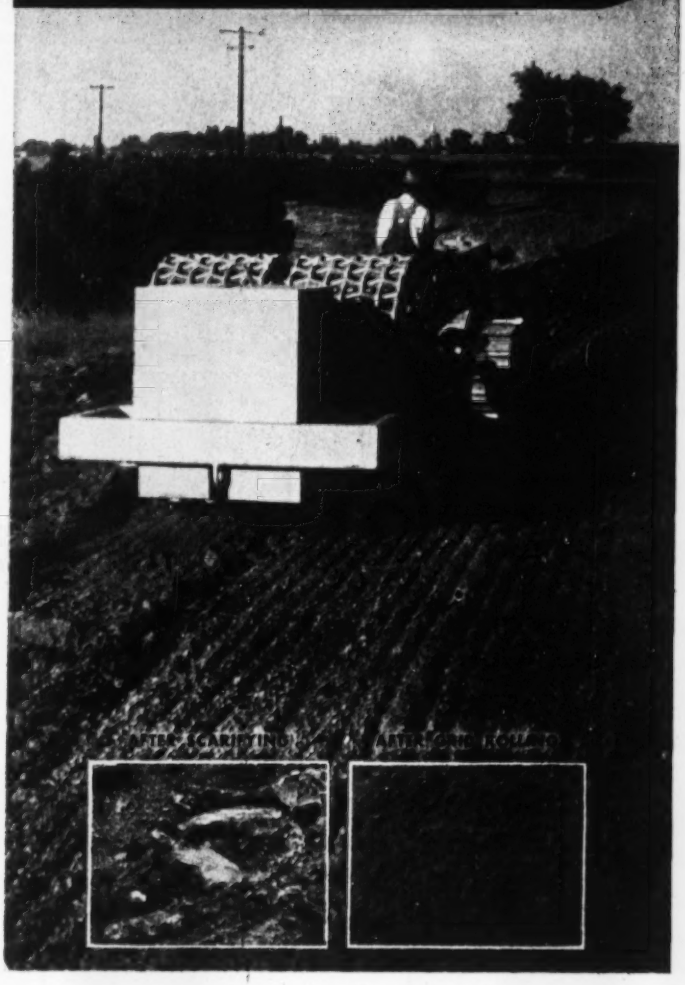
Lin-Hill Constructors, Inc., Emerson, N. J., CA, **$112,156** pumping station, LITTLE FALLS, N. J. Little Falls Twp., Municipal Bldg., Little Falls, N. J. Bids Apr. 20. CD 4/16.

PENNSYLVANIA—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Jos. Ciccone, Ivyland Rd., Ivyland, Pa., LB **$453,797,** wid'n. 16,356 ft. pavement with crushed aggregate base various in width and bit. surf. T.R. 29, Carbon and Luzerne Counties;

(Continued on page 119)

Repair or Rebuild
roads and streets the modern way ...the GRID ROLLER way
for faster salvaging of black-top at less cost!



No other single piece of road building equipment can match the Hyster Grid Roller in dollars returned per dollar invested! Progressive road builders and officials of counties, townships and municipalities throughout the country are adopting the Grid Roller method because it results in a *better* job, yet makes possible *substantial* savings. For limited or fixed budgets this means *more miles of road can be repaired or rebuilt.*

Key to savings is the fact that the Grid Roller performs three functions: (1) salvages the old surface material, (2) compacts the base, (3) rolls the new surface. On the job illustrated here, for example, involving only 1.6 miles of rebuilt road, savings approximately *matched the cost of the Grid Roller!*

A new 16 MM sound motion picture will be available soon showing the Grid Roller in action on different types of black top jobs, including the job illustrated here. Make arrangements now to see this motion picture at your Caterpillar-Hyster dealer, or write for information to:

HYSTER COMPANY

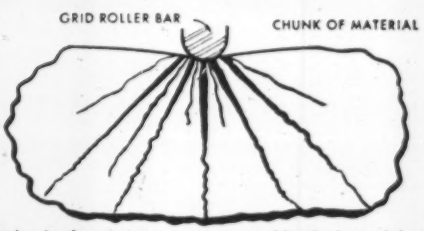
2953 N. E. Clackamas St.
Portland 8, Oregon

1853 N. Adams St.
Peoria 1, Illinois

THERE'S PROFIT IN HYSTER POWER

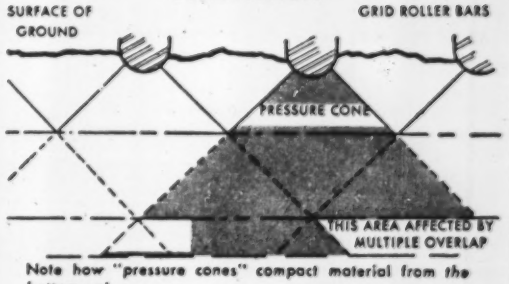
THE GRID ROLLER PRINCIPLE IS EQUALLY EFFECTIVE FOR:

BREAKING UP BLACK TOP



Impact loads of up to ten tons are exerted by the bars of the Grid Roller on chunks of material, thus immediately breaking piece—or causing fractures which break apart easily on the next pass.

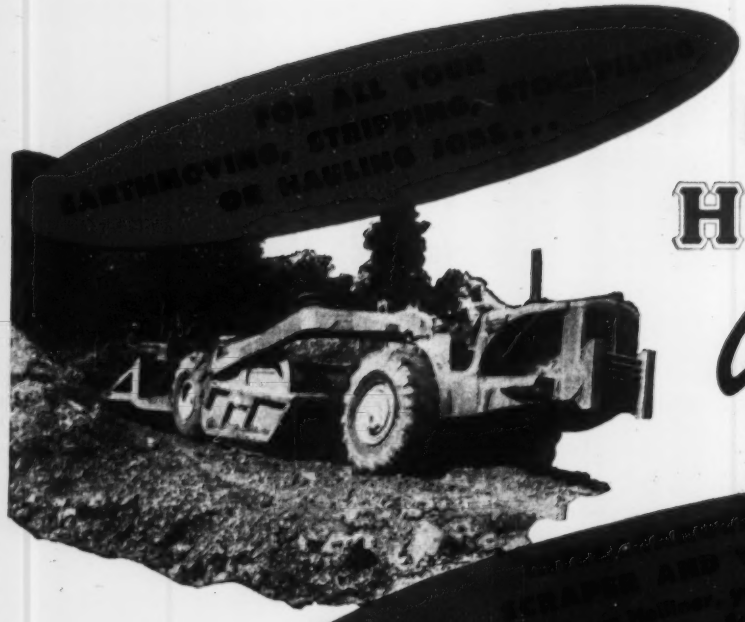
COMPACTION



Note how "pressure cones" compact material from the bottom up!

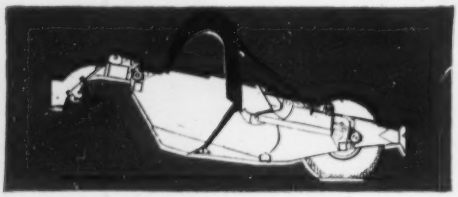
HYSTER® COMPANY • PORTLAND, OREGON; PEORIA, ILLINOIS; NIJMEGEN, THE NETHERLANDS

YOU'LL LIKE THESE HEILINER *Advantages*



"TILTING FLOOR" SCRAPER with POSITIVE FORCED EJECTION

This is the simplest type of forced ejection known. The floor of the bowl is hinged back of the cutting blade and simply tilts up to a 75° angle by means of a positive ram action. The load is forced out the wide front opening, while even the stickiest material is scoured from the sides and stationary back of the bowl. Material is dumped fast and clean. There's no leftover yardage to haul back to the pit.



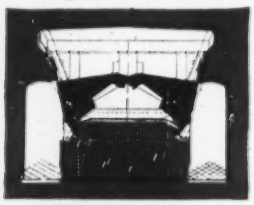
THE RIGHT POWER PROPERLY APPLIED MEANS LOWEST COST PER YARD

Whether you're using the Scraper or the Wagon, your Heiliner employs the *exactly right* power, correctly applied at the point of action to assure the mechanical efficiency which keeps cost per yard at the minimum. Heiliner's "power with a purpose" *utilizes* horsepower instead of wasting it . . . and horsepower saved by more efficient design cuts costs on every operation.

Get complete details on *all* Heiliner advantages from your nearest Heil Distributor.

HIGH CLEARANCE WAGON WITH FAST-OPENING DOORS

The Heiliner extra heavy-duty wagon has foolproof clam type doors which open fast and clean, with the unit moving or standing. Equalized cable action plus interlocking gears at the trunnion bearings force the doors to operate in unison. Doors drop back to closed position by gravity. There's no chance of bogging down with Heiliner high-clearance wagons because doors do not drop below hopper body level.



THE HEIL CO.

Dept. 163

3001 W. MONTANA ST., MILWAUKEE 1, WIS.

Factories: Milwaukee, Wis.—Hillside, N. J.
Sales Offices: New York, Union, N. J., Washington, D. C., Atlanta, Cleveland, Milwaukee, Detroit, Chicago, Kansas City, Denver, Dallas, Los Angeles, Seattle; Rio de Janeiro, Brazil.

R-17

(Continued from page 116)

J. Robert Bazley, Inc., P.O. Box 117, Pottsville, Pa., LB $171,796, constr. 4.437 ft. divided hy. of rein.-con. 22 ft. wide on each side of 4 ft. concrete divisor, L.R. 39043 (3), Lehigh Co.;

Julius Krummell & Guy Trimpey, Canadensis, Pa., LB $215,531, constr. 11,499 ft. crushed aggregate base with bit. surf. variable in width, T.R. 90, Monroe Co. Bids May 22. CD 5/7.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg. Harrisburg,

Allegheny Asphalt & Paving Co., Inc., 801 Bingham St., Pittsburgh 3, Pa., CA $1,284,403, 3.52 mi. crushed aggregate base with bit. surf. variable 16 to 50 ft., 7 rein.-con. structures over tributary to Bonnie Brook; two I-beam bridges and one rein.-con. bridge over Bonnie Brook, bit. surf. on 2 railroad crossings and grading, drainage, Butler Co. Bids May 1. CD 5/6, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Fred W. Ewing, Inc., 405 W. Main St., Corry, Pa., CA $728,663, widen and overlay 3.85 mi. bit. surf., variable to 50 ft. wide, constr. rein.-con. bridge over Trout Run, U. S. Rte. 20, Erie Co.;

C. S. Yoder, 4 Wine St., Uniontown, Pa., CA $714,115, 4.7 mi. crushed aggregate base with bit. surf. variable to 20 ft. wide, constr. two I-beam bridges over Dunkard Creek and over Whiteley Creek, Leg. Rt. 616, Greene Co. Bids May 8. CD 5/13, under LB.

Harrison Constr. Co., 1101 Western Ave., Pittsburgh, Pa., LB $321,309, Schedule A;

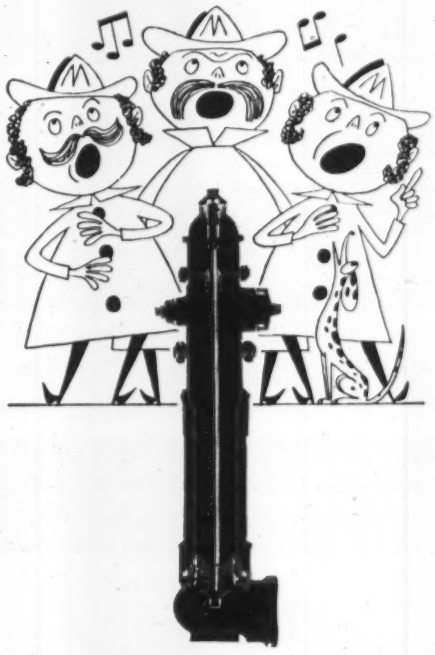
Allegheny Asphalt & Paving Co., 9 and Bingham Sts., Pittsburgh, Pa., LB $249,421, Schedule B, repaving, curbing and sidewalks, Miller Grove and Old Clairton Rd., Pleasant Hills;

Harrison Constr. Co., 1101 Western Ave., Pittsburgh, Pa., LB Est. $95,400, road wid'n. and reconstr., Stowe Twp. PITTSBURGH, PA. Comrs., Allegheny Co. County Office, Pittsburgh, Pa., Bids May 14. CD 5/6.

† **Merando Inc.**, 813 4th St. N.E., Wash., D. C. CA $673, 817, Item 4, two 1 story, 80x225 ft., 200x562 ft., steel, concrete, masonry WAREHOUSES, Naval Air Station, NOY 75370, PATUXENT RIVER, MD. Dist P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids May 13, awarded May 18. CD 5/19, under LB.

† **Plymouth Electrical Constr. Co.**, 945 Pennsylvania Ave. N.W., Wash, D. C., LB, $134,340, electrical distr. sys. Imprvs. at Naval Research Laboratory, Bellevue Contract NOY 76545, WASH., D. C. Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids May 13. CD 5/6.

Installed in Grandfather's Day— Still Providing Full Community Protection



MATHEWS HYDRANTS

Made by R. D. Wood Company

Public Ledger Building, Independence Square
Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

• Mathews Hydrants are built to last. They are so simple and well constructed that there's virtually nothing to go wrong.

• Maintenance is easy, too. Operating thread can be lubricated during spring and fall inspections.

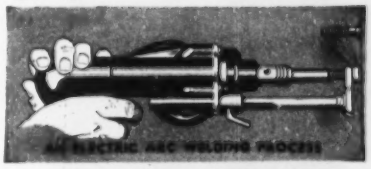
• When the time comes to modernize, it is a simple matter to remove the old barrel and replace it with a modern one. The job is done in a few minutes without digging or breaking the pavement.

No Other Hydrant Offers So Many Essential Features

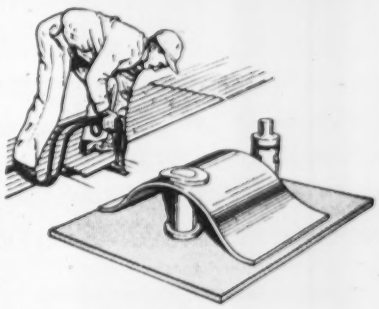
Compression type valve prevents flooding • Head turns 360° • Replaceable head • Nozzle sections easily changed • Nozzle sections easily raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • Operating thread only part to be lubricated • All working parts contained in removable barrel • A modern barrel makes an old Mathews good as new • Available with mechanical-joint pipe connections

150th anniversary

FASTEN IT BETTER... AT LESS COST... WITH NELWELD



FOR EXAMPLE... CORRUGATED METAL ROOFING AND SIDING



ONE SIDE APPLICATION
FINE APPEARANCE GREATER STRENGTH
LOWER INSTALLATION COST

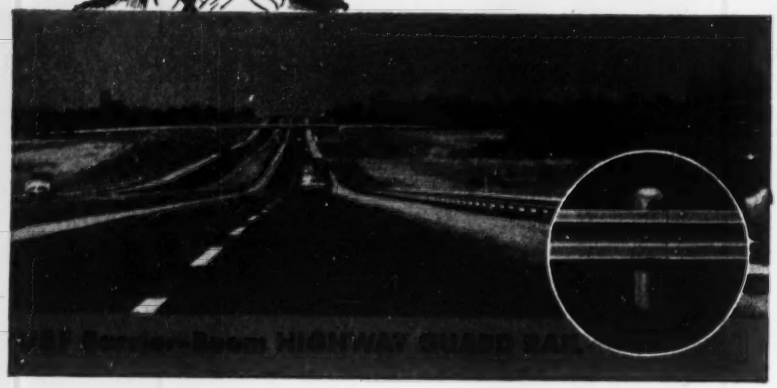
Nelson construction fasteners are distributed by United States Steel Supply Co., Reynolds Metals Co., Aluminum Company of America, Johns-Manville, Philip Carey Mfg. Co., Armstrong Cork Co., Southern States Iron Roofing Co.

NELWELD

NELSON STUD WELDING

DIVISION OF GREGORY INDUSTRIES, INC., LORAIN, OHIO

They Do The Job *Quicker...* and at LOWER COST!



This deep beam type rail mounts directly on the post and provides mounting holes every 7½ inches to facilitate post positioning. "Adjacent to post" splices are easily made. No special mounts, or end anchoring required.

USF Structural-Plate BRIDGE FLOORING

Up comes the worn wood planking . . . down goes the USF Bridge Flooring . . . anchor by welding . . . surface and your bridge is back in service . . . quickly and at low cost.

Write for Bulletins

USF — UNITED STEEL FABRICATORS, INC.
WOOSTER, OHIO
PRODUCTS Hollow Metal Doors • Prefabricated Metal Buildings • Window Wells Highway Guard Rail • Bridge Flooring • Corrugated Metal Pipe

GUNITE Since 1915 CONCRETE SAND AND CEMENT Placed by Air

38 YEARS OF EXPERIENCE PLUS— Hundreds of nationally known clients is evidence of our engineering and construction ability to produce "Gunite" concrete construction at a lower overall cost.

Send for specifications and bulletins— no obligation.
See our catalog in Sweets

GUNITE CONCRETE & CONST. CO.
ENGINEERS CONTRACTORS
1301 WOODSWETHER RD. KANSAS CITY, MO.
CHICAGO ST. LOUIS MINNEAPOLIS
DENVER HOUSTON NEW ORLEANS

Prompt, competent Contract Bond Service

ÆTNA

ÆTNA CASUALTY AND SURETY COMPANY
Affiliated with
Ætna Life Insurance Company
HARTFORD 15, CONNECTICUT

BUILDINGS

LOW BIDS AND CONTRACTS

John N. Cowper Co., Inc., Sidway Bldg., Buffalo, N. Y., CA. $449,900, elementary SCHOOL addn., ARCADE, N. Y. Arcade Central School Dist. 1, Arcade, N. Y. Bids Apr. 29. CD 4/23.

E. W. Howell Co., 305 Deer Park Ave., Babylon, N. Y., LB $517,500, SCHOOL, BELLPORT, N. Y. Bd. Educ. Union Free School Dist. 28, Twp. of Brookhaven, Bellport, N. Y. Bids May 8. CD 4/23.

▲ **Ralph & Paul Loshen**, c/o Intercity Associates, Inc., 167-08 Hillside Ave., Jamaica, N. Y. Owner Builds. $6,000,000. 300 HOUSES and SHOPPING CENTER, 335-acre tract, Deer Park Ave. and Northern State Parkway to be called Woodedge Homes, HUNTINGTON, N. Y.

McCloskey & Co., 1620 W. Thompson St., Phila., Pa., CA $350,000. CONVENT, DARBY, PA. Blessed Virgin Mary Church, Darby, Pa. Gleeson & Mulrooney, 1612 Market St., Phila., Pa., archts.

George H. Evans, 1914 Spring Garden St., Phila., Pa., CA. $536,816. Penn Valley SCHOOL, Levittown, FALLSINGTON, PA. Falls Twp. School Auth., Fallsington, Pa. Bids Apr. 23. CD 5/15.

Stephen Schifter, Inc., 6601 Garden Court, Upper Darby, Pa. Separate Contracts, $300,000. RESIDENTIAL DEVELOPMENT, Coopertown Rd., HAVERTON, PA.

United Building Constr. Corp., 845 N. 19 St., Phila., Pa., CA $350,000. FOOD MARKET, 32 and Walnut Sts., PHILA., PA. Penn Fruit Co., 1919 Chestnut St., Phila., Pa. David Supowitz, 246 S. 15 St., Phila., Pa., archt.

Uniontown Constr. Co., 114 E. Main St. Uniontown, Pa., CA. $300,000. grade SCHOOL, RUFFSDALE, PA. East Huntington Twp. School Auth., Alverton, Pa. J. H. Hoover, 333 Blvd. of Allies, Pittsburgh, Pa. archt. Bids Feb. 17.

J. H. Requard Realty Co., 7610 German Hill Rd., Baltimore, Md. CA. $671,000. 122 brick, masonry HOUSES, 7900 and 8000 blocks North Boundary Rd., 8000 block Del Haven Rd., Gray Haven Sect., BALTIMORE, MD. The Gray Haven Co., 7610 German Hill Rd., Baltimore, Md.

Kahn Engineering Co., 427 0 St. S.W., Wash., D. C., LB $409,029. Carver Elementary and High SCHOOL, ELKTON, MD. Cecil Co., Bd. Educ., Elkton, Md. Bids May 19. CD 4/23.

▲ **Black & Decker**, E. Pennsylvania St., Towson, Md. Separate Contracts. $2,000,000. steel, concrete, masonry 126,800 sq. ft. mfg. PLANT addn., HAMPSTEAD, MD. The Austin Co., 16112 Euclid St., Cleveland, O., engrs.-archts.

Kirby & McGuire, 2518 Greenmount Ave., Baltimore 18, Md. LB. $661,651. Hawthorne Elementary SCHOOL, Kingston Rd., Middle River, TOWSON, MD. Baltimore Co. Bd. Educ., Aigburth Rd., Towson, Md. Bids May 19. CD 5/5.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

WEST VIRGINIA—B.A. 6/9—West Virginia Turnpike Comn., 1340 Wilson St., Charleston.

Mercer Co.—Contract 18, grading, drainage Mile 0 to 4.8, substructure bridges 2-3-4-4A and 5. Howard, Needles, Tammen & Bergendoff 804A, Greenbrier St., Charleston, engrs. CD 4/30/52.

† **Kentucky**—B.A. On Or About 6/16—U. S. Eng., 303 Federal Office Bldg., Nashville 1, Tenn., constr. flood protection, Pineville, Sect. 1, incl. 14,700 cu. yd. excav., incl. borrow, 11,000 cu. yd. compacted fill, 420 tons steel sheet piling, 2,450 cu. yd. concrete, 1,630 cu. yd. riprap and rock fill, 2,000 lin. ft. sewers, CIVENG-40-058-53-49. CD 10/30.

BIDS ASKED—BUILDINGS

Ala., Hamilton—HEADQUARTERS, etc.—B.A. 6/16—Alabama Military Dpt., P. O. Box 1311, Montgomery, headquarters and administration bldg. $400,000. CD 5/20.

Miss., Waynesboro—HOUSING—B.A. 6/16—Waynesboro Housing Auth., Housing Projs. Miss. 68-1 and Miss. 68-2, $425,000. Plans deposit $75. Extended date, Morris L. McNair, Rosenbaum Bldg., Meridian, archt. CD 5/7.

† **Va., Little Creek**—BARRACKS—B.A. 6/16—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, 3 story, 281x477 ft., 1,500 men's barracks at U. S. Naval Amphibious Base, NOY 77143, Spec. 37622. Plans deposit $40. Knappen, Tippetts, Abbett, McCarthy, 62 W. 47 St. New York, N. Y. engrs. CD 9/2.

† **Va., Little Creek**—BARRACKS—B.A. 6/16—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, 900 men enlisted men's barracks at U. S. Naval Amphibious Base, NOY 77144, Spec. 37623. Plans deposit $40. Knappen, Tippetts, Abbett, McCarthy, 62 W. 47 St., New York, N. Y., engrs. CD 3/19.

Ga., Buena Vista—SCHOOL—B.A. 6/23—Marion Co. Bd. Educ., Buena Vista, Negro Elementary School $540,000. McDonald & Co., Walton Bldg., Atlanta, archts.

Ga., Covington—HOSPITAL—B.A. 6/23—Newton Co. Hospital Auth., Covington, hospital, $505,000. Bid date changed. Aeck Assocs., 140 Peach Tree St. N.E., Atlanta, archts. CD 5/12.

Ga., Nashville—SCHOOL—B.A. 6/23—Berrien Co. Bd. Educ., Nashville, White High School, $450,000. Plans deposit $50. Lloyd Greer, P. O. Box 529, Valdosta, archt. CD 8/27/52.

Fla., Sarasota—HOSPITAL—B.A. 6/29—City and Sarasota Co., hospital, $900,000, Extended date. Kannenburg & Hanebuth, 267 W. 8 St., archts. CD 5/20.

(Continued on page 123)

there's a *BIG* difference ...in this 3/4 yd. shovel!

Look beyond the dipper size when you investigate your next 3/4-yard shovel. Shovels may be rated the same, may even look alike, but that's where similarity ends when you look at the 3/4-yard Lorain TL-25.

Look into the cab to see if power flows directly and efficiently from the engine to the point of use, as it does on the "TL-25" . . . or *does* power wear itself out in long gear trains or in bending itself around corners?

Look to see if it has a great quantity of duplicate and interchangeable parts . . . does it have "packaged components" to permit quick switching of all major components. The "TL-25" *does* have these for easier service and quicker maintenance . . . another reason why it stays on the job longer.

Look at what it does on the job. *Dirt in the truck* means more than a whole slew of "talking-points". If you believe *actions speak louder than words,* you'll like the "TL-25" because it is on performance that it really shines. Your nearest Thew-Lorain distributor will be glad to prove these statements.

3/4 yards of power *plus* . . .

Whether gas or diesel, it goes to work directly . . . tears into the job . . . and consistently turns out profit-earning yardage.

3/4 yards of speed *plus* . . .

You can capitalize on every bit of "TL-25" power because in operation it responds with lightning speed, has high acceleration that kills "drag", and is a muscle-saver for the operator.

3/4 yards of endurance *plus* . . .

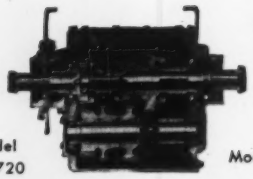
Anti-friction bearings, oil-enclosed gears, 5 identical shoe clutches, drop-forged hook rollers . . . and other items of highest quality materials and workmanship assure "TL-25" stick-to-it-iveness on the job.

3/4 yards of selection *plus* . . .

No other machine in *any* class offers such a selection of booms and mountings to hit your job right-on-the-button. Select from 4 crawler sizes, 7 rubber-tire mountings, 7 interchangeable booms.

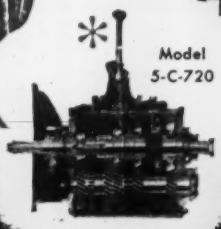
THEW LORAIN TL 25

THE THEW SHOVEL CO., LORAIN, OHIO

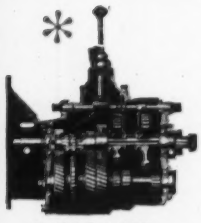


Model 3-A-65

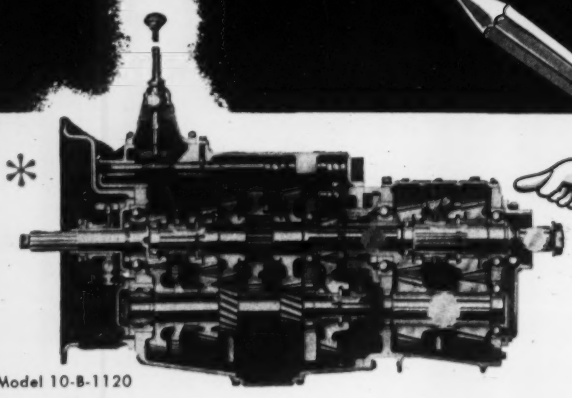
Model 5-C-720



You write the Specifications!



Model 5-A-620



Model 10-B-1120

Before buying a new truck, you carefully consider all factors related to the job you'll want your truck to do . . . every road and load condition . . . everything that affects your particular operation.

You specify the "make" of truck . . . the type . . . the power plant . . .

* Specify the transmission, too!

Among the more than 110 Fuller Transmission models for every heavy-duty job—there is a "proved in service" unit to fit *your* job . . . designed to operate quietly and dependably . . . profitably . . . and built to stand up under the most grueling conditions, on or off the highway.

Write for Condensed Specification Folder.

Fuller TRANSMISSIONS ®

FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO 13F, MICHIGAN

Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.

(Continued from page 120)

Ala., Mobile—SCHOOL—B.A. 6/30—Mobile Co. Bd. Educ., Court House, Central, Junior High School, $835,000. Platt Roberts & Co., Merchants National Bank, archts. CD 5/11.

SOON LETS CONTRACT—BUILDINGS

La., Baton Rouge—MOTEL—At office Manson & Thompson, archts., Box 1266, 8200 Florida St., soon let contract, brick, tile motel, 2 utility rooms, office, lounge for Mr. & Mrs. J. C. Temple, 8282 Airline Hy., Baton Rouge, La.

Va., Arlington—BUILDING—Arlington Trust Co., 16 St. and North Arlington Rd., soon lets contract, 4 and 6 story building addn. $318,000. R. A. Willgoose, 300 Montgomery St., Alexandria, archt. CD 5/7.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Virginia Engr. Co., Inc., 29th St. at James River, Newport News, Va., LB **$99,779**, Sect. I.

Van deRiet Constr. Co., 521 W. 25 St., Norfolk, Va., LB **$49,724**, Sect. II, for Newmarket Interceptor and Pump Station, Hampton and Warwick, NORFOLK, VA. Hampton Roads Sanitation Dist. Comn., Bd. of Trade Bldg., Norfolk, Va. Bids May 12. CD 3/5.

VIRGINIA—State Hy. Dpt., Central Highway Office Bldg., 1221 E. Broad St., Richmond,

Bennett Constr. Co., Inc., Salem, Va., LB **$161,094**, 0.978 mi. 16 ft x 6 in. stabil. base, bit. surf. tr. and bridge over Smith River from 0.517 mi. west of W. End Bridge over Smith River to 0.461 mi. east of East End Bridge over Smith River, Rte. 622, Proj. 1344-04-05, BPR: S-6 (2), Henry Co.;

E. F. Blankenship Co., 1308 W. Main St., Salem, Va. LB **$86,253**, widen overpass and approaches, R. F. and P. R. R. on W. Broad St., Rte. 250, Proj. 1743-71-71, BPR U-591 (4), City of Richmond;

James P. Dillard, 1603 Winder St., Richmond, Va., LB **$81,666**, stabil. base, bit. surf. tr. and bridge over Otterdam Swamp 0.815 mi., 0.9 mi. north Sussex-Surry Co. Line to 1.734 mi. N. Sussex-Surry Co. Line, Rte. 40, Proj. 2790-02-03, BPR S-477 (2), Surry Co.

Raymond Concrete Pile Co., 1625 "I" St., N. W. Wash. D. C., LB **$119,600**, borings along line of proposed Hampton Roads Crossing in vicinity of Willoughby Spit in City of Norfolk and Phoebus in City of Hampton (Line 8), Contr. No. 1, City of Norfolk and City of Hampton. Bids May 19. C 5/1.

VIRGINIA—State Hy. Dpt., Central Highway Office Bldg., 1221 E. Broad St., Richmond

T. E. Brown, Charlotte, N. C., LB **$422,505**, c. conc. 3.891 mi., from 3.783 mi. west of WCL Boydton to 1.511 mi. east of ECL Clarksville, Rte. 58, Proj. 1758-26, BPR F-331 (3), Mecklenburg Co.;

W. W. Tuck & Sons, Virgilina, Va., LB **$382,017**, b. conc. base, I-3 bit. top course 2.816 mi., from WCL Bedford to 2.816 mi. west of WCL Bedford, Rte. 460, Proj. 1909-09, BPR F-315 (13), Bedford Co.;

C. G. Poole, Inc., Capital Club Bldg., Raleigh, N. C. LB **$510,514**, b. conc. 5.173 mi. from 5.136 mi. west of WCL Tazewell, to 10.309 mi. west of WCL Tazewell, Rte. 19 and 460, Proj. 1992-11, BPR: F-405 (12), Tazewell Co.;

Atlantic Biutlithic Co., 1400 Roseneath Rd., Richmond, Va., LB **$68,120**, b. conc. Rte. 250, Broad St., Lombardy to Sheppard Sts., Proj. 1743-03 (Contr. No. 2), City of Richmond; Bids May 19. CD 5/1.

† **J. R. Houska Co., Inc.**, P. O. Box 598, Norfolk, Va. CA **$139,311**, incinerator plant, Naval Amphibious Base, NOY 77142, LITTLE CREEK, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va. Knappen Tippetts Abbett Eng. Co., 62 W. 47 St., New York, N. Y., engr. Bids May 12. CD 4/29, under Norfolk, Va.

WEST VIRGINIA—West Virginia Turnpike Comn., 1340 Wilson St., Charleston, Zone 5,

Standard Asphalt & Tar Co., 1640 4 Ave., Charleston, W. Va., CA, **$986,997**, Contract 28C, grading, drainage 0.6 mi. Charleston Interchange ramps 0.4 mi. substructure Bridges 90 and 91, Kanawha Co. Bids May 19, awarded May 21. CD 5/21, under LB.

R. N. Hewet Corp., 703½ Pennsylvania Ave., Charleston W. Va., LB, **$138,000**, water supply and distr. sys. 100,000 gal. steel storage tank, 4- to 8-in. c.i. or transite mains, hydrants, 2 in. and ¾ in. galv. service lines and meters, GRANT TOWN, W. VA. Town, Grant Town, W. Va. Bids May 6. CD 4/23.

E. C. Bridges, Heath Springs, N. C., LB **$512,314**, rural distr. lines, Mecklenberg and Union Counties, NORTH CAROLINA. Union Electric Membership Corp., Monroe, N. C. Bids May 14. CD 4/10.

GEORGIA—State Hy. Dpt., 2 Capitol Sq., Atlanta,

Industrial Contg. Co., Fla. Theater Bldg., Jacksonville, Fla., CA, **$482,784**, superstructure for Bridge at Jekyll Creek on Brunswick-Jekyll Island Rd., F 007-4 (1) Contract No. 2, Glynn Co.;

Wainer Constr. Co. Inc., Valdosta, Ga., CA, **$76,066**, widening bridge over Big Indian Creek and approaches Perry-Hawkinsville Rd. State Rt. 11. approx. .7 mi. S. E. of Perry SAP 1843-A (4), Houston Co. Bids May 22. awarded May 22. CD 5/13.

Schlev Gordy, P. O. Box 4, Columbus, Ga., CA, **$432,250** WW imprvs., MILLEDGEVILLE, GA. City, Milledgeville, Ga. Bids May 21. CD 4/29.

▲† **Smith Eng. & Constr. Co.**, W. Pensacola St., Pensacola, Fla., LB, **$1,076,609** yard work for heavy system and installation bldg., Inv. 53-43, EGLIN AIR FORCE BASE, FLA. U. S. Eng., P. O. Box 1169, Mobile, 7, Ala. Bids May 19. CD 1/15.

† **Fred Howland, Inc.**, 1451 N. W. 20 St., Miami, Fla., CA, **$443,517**, Item 3, enlisted men's barracks Naval Air Station, NOY 74218, KEY WEST, FLA.

A profitable tool with many uses!

BARCO *Gasoline* HAMMER

ONE MAN OPERATION!
NO COMPRESSOR NEEDED

HERE'S why owners of the *improved* Barco Gasoline Hammer are enthusiastically acclaiming it as *"A Profitable Tool With Many Uses!"*

- New ignition system—quick, easy starting; trouble-free.
- Quick cable disconnect at handle. New handle design; switch convenient to operator's thumb.
- More portable than ever! Easily taken to any location by car, truck, or light plane.
- Versatile! A handy tool for Pavement Breaking . . . Cutting . . . Digging . . . Rock Drilling . . . Frost Breaking . . . Rod Driving. Ideal for general utility, standby, and emergency service.
- Economical! Low first cost, low operating expense, low maintenance expense. Quickly pays for itself.
- Powerful, rugged. Up to 1550 strokes per minute.

ASK FOR A DEMONSTRATION — See for yourself — ask for our nearest distributor to give you a demonstration.

PAVEMENT BREAKING — Used by municipalities and utilities to make street openings, break curbs, and cut trenches.

ASPHALT CUTTING — An easy, fast job with a Barco Hammer.

Send for a copy of this interesting new Bulletin No. 613 — "BARCO GASOLINE HAMMERS".

EMERGENCY WORK — Day or night, one man can take tool to any location.

BARCO *Manufacturing Co.*

514G Hough St., Barrington, Illinois
A Chicago Suburb

GASOLINE HAMMERS AND RAMMERS

WISCONSIN-Powered HOIST

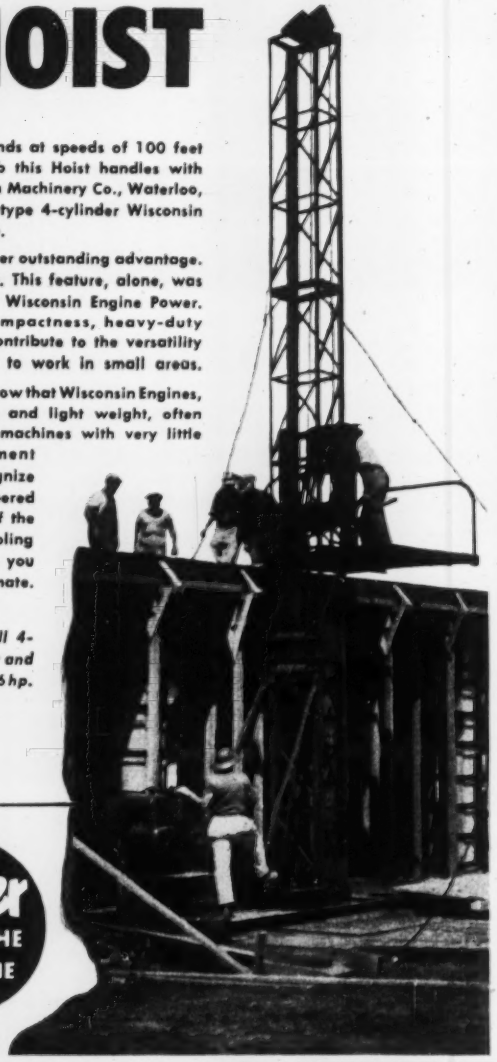
Lifting as much as 2,500 pounds at speeds of 100 feet a minute is the kind of a job this Hoist handles with ease. It's made by Construction Machinery Co., Waterloo, Ia. Power is provided by a V-type 4-cylinder Wisconsin Heavy-Duty Air-Cooled Engine.

The Tower Hoist has still another outstanding advantage. It erects itself in limited space. This feature, alone, was good reason for the choice of Wisconsin Engine Power. Such Wisconsin features as compactness, heavy-duty power and light-weight, all contribute to the versatility of equipment that has to go to work in small areas.

Designers of equipment also know that Wisconsin Engines, because of their compactness and light weight, often adapt themselves to existing machines with very little design change. And equipment builders and buyers, alike, recognize the added advantages of tapered roller bearings at both ends of the crankshaft and foolproof air-cooling . . . for dependability when you need it, in all weather and climate.

●

Write for information about all 4-cycle single-cylinder, 2-cylinder and V-type 4-cylinder models, 3 to 36 hp.



Power TO FIT THE JOB

Power TO FIT THE MACHINE

MOST H.P. HOURS

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

A 7445-½-IA

"Gunite"

. . . . . the sand-cement product of the "CEMENT GUN," for Concrete and Masonry Repairs, Pre-Stressed Tanks, Steel Encasement and for lining Reservoirs, Sewers and Tunnels.

CEMENT GUN COMPANY

"GUNITE" CONTRACTORS

GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.

MANUFACTURERS OF THE "CEMENT GUN"

District P. Wks. Office, Dpt. Navy, Charleston, S. C. Bids Apr. 15. CD 4/21, under LB.

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,

Louisiana Paving Co., Drawer 8, Kenner, La. CA $912,885. c. conc. 6.876 mi. Gramercy-Garyville Hy., State Rte. 1500, S.P.7-05-06 and 7-04-08, F. A. Proj. FI 172 (9), St. James and St. John the Baptist Parishes. CD 5/6, under LB.

Coleman-Trainor, Box 1477, Huntington, W. Va. LB $129,972. Contr. II, III, water distr. sys.;

W. E. Caldwell Co., 200 E. Braindels St., Louisville, Ky. LB $67,500. Contr. IV elevated tank for water sys., ELIZABETHTOWN, KY. City, City Hall, Elizabethtown, Ky. Bids May 12. CD 4/22.

Ruby Constr. Co., Madisonville, Ky. LB $856,273. est. $1,000,000. overpass on Eastern Parkway 4 lane concrete, extends from Brook St. to Hahrn Ave., LOUISVILLE, KY. City of Louisville and Commonwealth of Kentucky, Dpt. Hys., Frankfurt, Ky., W. W. Sanders, city engr. Bids May 22. CD 11/23/51.

BUILDINGS

LOW BIDS AND CONTRACTS

† Crain & Denbo, P.O. Box 969, Durham, N. C., LB $400,000. temporary BARRACKS, SUBSISTENCE BLDG., roads and walks, Naval Mine Depot, NOY 75747, YORKTOWN, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Clark & Buhr, Midtown Bldg., Wards Corner, Norfolk, Va., archts. Bids May 19. CD 4/28.

Kenhill Constr. Co., 307 Duffy St., Charleston, W. Va., LB $809,571, combined Nitro Elementary and High SCHOOLS; LB $622,621, high school only CHARLESTON, W. VA. Kanawha Co. Bd. Educ., Quarrier and Elizabeth Sts., Charleston, W. Va. Bids May 20. CD 4/23.

Interstate Constr. Co., 211 Atherton St., Charlotte, N. C., LB $479,839, Black Mountain-Swannanoa HIGH SCHOOL, ASHEVILLE, N. C. Buncombe Co. Bd. Educ., Court House, Asheville, N. C. Bids May 19. CD 3/31.

Algernon Blair, P.O. Box 749, Montgomery, Ala., CA $810,000, 81 RESIDENCES, ATLANTA, GA. Tip Top Co., 72-11 St., Atlanta, Ga.

▲† Gust K. Newberg Constr. Co., 2040 N. Ashland St. Chicago, Ill., CA, $2,017,000 general construction TB-NP BUILDING 90 AUGUSTA, GA. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Mar. 10. CD 3/12, under LB.

▲ Wagnon & Wagnon, 753 Edgewood Ave. N.E., Atlanta, Ga. Owner Builds, $1,800,000, 225 RESIDENCES, WARENER ROBINS, GA.

Gust K. Newberg Constr. Co., 99 N.E. 71 St., Miami, Fla., LB, $673,000, "Ashe Memorial Building", ADMINISTRATION BLDG., CORAL GABLES, FLA. University of Miami, 1200 Campo Sano Ave., Coral Gables, Fla. Bids May 19. CD 5/7.

▲ Arnold Constr. Co., Palm Beach, Fla., LB, $2,849,977 Sect. 1, 5-story, rein.-con. HOSPITAL, JACKSONVILLE, FLA. Baptist Hospital Assn. of Jacksonville, 1100 San Marco Blvd., Jacksonville, 7, Fla. Bids May 19. CD 5/13.

▲† Bruce Constr. Corp. & Miami Station Inc., 1118 N.E., 2 Ave., Miami, Fla., CA, $3,544,461, addnl. BUILDINGS and utilities, Veterans Administration Hospital, LAKE CITY, FLA. Veterans Admin. Munitions Bldg., Wash., D. C. Bids May 5. CD 5/8, under LB.

Wm. F. Chatlos, c/o Igor B. Polevitzky, archt., 250 N.E. 18 St., Miami, Fla. Owner Builds, $750,000 APARTMENT, MIAMI, FLA.

Slote Homes Corp., 7803 Biscayne Blvd., Miami, Fla. Owner Builds, $500,000 20 RESIDENCES, MIAMI, FLA.

▲ Robert L. Turchin, Inc., 1835 Purdy Ave., Miami Beach Fla., CA, $1,824,000, 10 story HOTEL, 1 Lincoln Rd., MIAMI BEACH, FLA. DI Lido Hotel, 1 Lincoln Rd., Miami Beach, Fla. Oboler & Clarke, 605 Lincoln Rd., engrs. and Melvin Grossman, 311 Lincoln Rd, archt., both Miami Beach, Fla. CD 5/20, under LB.

▲ Farnsworth & Chambers Co., P.O. Box 332, New Orleans, La. LB $1,269,000. 2 DORMITORIES, NEW ORLEANS, LA. Tulane University, 6823 St. Charles Ave., New Orleans, La. Bids May 21. CD 5/14.

▲ B & B Constr. Co., 700 W 68 St., Shreveport, La. CA Est. $1,000,000. APARTMENT units, SHREVEPORT, LA. N. O. Thomas Jr., New Commercial Bank Bldg., Shreveport, La.

† John Wile Constr. Co., 826 Humler St., Louisville, Ky. CA $843,460. ACADEMIC BLDG. for armored school, FORT KNOX, KY. U. S. Eng., 830 W. Broadway, Louisville 3, Ky. Bids Mar. 12, awarded May 18. CD 5/24.

▲ W. L. Dainbridge Co., 3rd Natl. Bank Bldg., Nashville, Tenn., Owner Builds. $1,000,000. 125 RESIDENCES, NASHVILLE, TENN.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

† Michigan—B.A. 6/18—U. S. Eng., 428 Federal Bldg., Milwaukee 1, Wis., reconstr. 652.16 lin. ft. South Pier Sta. 3 plus 49.81 W to Sta. 10 plus 01.97 W with steel sheet piling at Grand Haven Harbor, CIVENG 47-013-53-55. CD 5/19.

† O., Lima—B.A. 6/19—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., rehabilitating roads and paving at Lima Ordnance Depot, Serial No. ENG-46-022-53-46. CD 5/6.

(Continued on page 126)

What's unusual about this machine?

6x36 WS PREformed Right Lang Lay
Monarch Whyte Strand with IWRC

This is a 6 x 36 PREformed rope, made up of 265 wires. That means 265 individual moving parts.

Because any wire rope is a complicated piece of machinery, it must be precision built.

There are 8 different sizes of wire in this rope — each drawn to exacting specifications for material and size.

Outside wires are one size. Inside wires are another. Core and filler wires are still other sizes.

All wires are cold-drawn to precise diameters so they will fit with snug uniformity into the structure of each strand.

Each wire is protected with lubricant applied during fabrication of the rope.

Macwhyte makes a thousand and one ropes to meet the needs of every type of equipment. Each is built with the exacting care that long, low-cost service demands.

Prompt recommendations from Macwhyte engineers are readily available without obligation.

MACWHYTE WIRE ROPE

THE RIGHT ROPE
FOR YOUR EQUIPMENT

Ask for G-15 Handbook

MACWHYTE COMPANY
2930 Fourteenth Avenue, Kenosha, Wis.

Manufacturers of Internally Lubricated PREformed Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal, Stainless Steel Wire Rope and Wire Rope Assemblies. Mill depots: New York Pittsburgh • Chicago • St. Paul • Fort Worth Portland • Seattle • San Francisco • Los Angeles • Distributors throughout U.S.A.

1059

New Woven Tape Is Non-Metallic

THE *LUFKIN* HI-LINE
NON-METALLIC WOVEN TAPE

The toughest miracle fibres recently developed by science are used in this new tape, which is designed in every way for longer wear. It has greatest dimensional stability—even after it is repeatedly soaked and dried. Markings are protected by coatings of specially compounded plastic that is resistant to abrasion, cracking, mildew, moisture, and temperature changes. The case is hand-stitched genuine leather, as tests have proven that leather wears longest. The first end of the tape—the point of greatest wear—is reinforced with durable green plastic, imprinted "Non-Metallic." "Instantaneous" readings are faster, more accurate. Last preceding foot number is repeated in red at each inch (or tenth of a foot). Total reading is at point of measurement.

Numerous Applications—the non-metallic Hi-Line is ideal for power, utility, and general work around high tension circuits. Woven tapes are popular in highway and general construction work when steel tape accuracy is not required. The Hi-Line can take the abrasion, moisture, and general hard usage which these jobs require. This tape is indicated wherever a non-conductor is needed. One example is in pipe-line work when companies check pipe laid for payment. Often such measuring goes across farm lands where electric fences give "jolts" to men measuring with steel or metallic woven tapes.

Descriptive Folder Available—a four-color folder describing the Hi-Line, and listing lengths, markings available, and prices, can be obtained by writing The Lufkin Rule Company, Saginaw, Michigan, Dept. ENR.

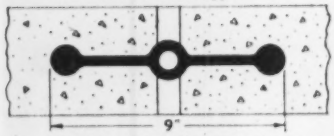
BUY *LUFKIN* TAPES • RULES • PRECISION TOOLS

FROM YOUR SUPPLY HOUSE

THE LUFKIN RULE CO., SAGINAW, MICH. 219

Servicised Molded Rubber WATERSTOP

FOR EXPANSION JOINTS
Center Bulb Type



Servicised Rubber Waterstops meet all standard engineering specifications. Made of durable, elastic, cured rubber compound.

Both types available in 6", 9" and 12" widths in any required length.

FOR CONSTRUCTION JOINTS
Flat Type

Write for the Servicised Products Catalog. Sent without obligation.

SERVICISED PRODUCTS CORP.
6051 W. 65th ST. • CHICAGO, ILL.

WELDING CONNECTORS

Saxe Welding Connection Units position and secure structural parts to be welded

Clip K3A permits an adjustable connection

These widely used units eliminate all hole punching and, with welding, produce the most economical, safe and quickly erected structural frame.

Write for 1951 edition, Structural Welding Practice Manual.

J. H. WILLIAMS & CO.
Buffalo 7, New York
Air Reduction Canada, Ltd. Montreal 2, Canada

BUILD With the BEST

DESLAURIERS
ROUND COLUMN FORMS
Sturdy • Straight • True
Since 1888—the standard in the construction industry...for lease only or, for lease-and-erection. Diameters; 12" to 56" and larger; any height. Two attractive capitals.

Write Today for FREE Folder or quotation
Deslauriers Column Mould Co., Inc.
2903 Central St., Evanston, Ill.
Chicago • Detroit • Oakland

(Continued from page 124)

▲ Mich., Pleasant Ridge—B.A. 7/8—Southeast Oakland County Garbage & Rubbish Auth., 23646 Woodward St., rein.-con. incinerator, 35 acre site, John R. and 12 Mile Rds. $1,750,000. Greeley & Hansen, 220 S. State St., Chicago, Ill., engrs. CD 4/9.

BIDS ASKED—BUILDINGS

† Ill., Decatur—SALVAGE—B.A. 6/16—U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill., salvage bldg. at Decatur Signal Depot, Serial No. ENG 11-032-53-81.

SOON LETS CONTRACT—BUILDINGS

Wis., Milwaukee—FACTORY—Western Electric Co., 1401 W. Clybourn St., Milwaukee, Zone 3, soon lets contract 1 and 2 story, 300x400 ft. factory. $900,000. Lockwood Greene Engineers, Inc., 10 Rockefeller Plaza, New York, N. Y., engr. CD 5/21.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ INDIANA—State Hy. Comn., Albert J. Wedeking, chn. State House Annex, Indianapolis, Zone 4,

Rieth-Riley Constr. Co., W. Madison St., Goshen, Ind., $369,836, 5 span 162 ft. steel beam and rein.-con. girder overhead bridge over N.Y.C. and St. L. Ry. east edge of Fort Wayne and continuous rein.-con. slab bridge over Interchange at U.S. rds. 30 and 24, Allen Co., LB $160,927, est. $208,602, 1 span 85 ft. steel plate girder subway, at N.Y.C. and St. L. Ry. north of La Porte, La Porte Co.;

J. C. O'Connor & Sons, Inc., 2104 Miner St., Fort Wayne, Ind., LB, $264,466, est. $336,532, twin structures, continuous rein.-con. slab bridge, proposed interchange of Cline Ave. and State Rd. 420, Lake Co.;

Arcole Midwest Corp., 3225 Main St., Evanston, Ill., LB, $681,101, est. $796,616, 14 span, 544 ft. rein.-con. girder and steel beam bridge N.Y.C. & St. L. Ry. E. J & E Rys. on Tri-State Highway and Proposed Interchange, Lake Co.;

John R. Gates, 2410 Springfield Ave., Fort Wayne, Ind., LB, $85,998, est. $104,590, 1 span 30 ft. rein.-con. arch bridge over Little Duck Creek, S. of State Rd. 28, Madison Co.;

Robert H. King, Danville, Ind., LB, $182,294, est. $302,-238 2 span 82 ft. steel beam subway under Penna. Ry., Indianapolis, Marion Co.;

J. L. Wilson, Bloomfield, Ind., LB, $203,122, est. $270,-675 2 span 100 ft. rein.-con. rigid frame overhead bridge U.S. 40 and State Rd. 100, E. of Indianapolis, Marion Co.;

J. S. Sweet, Cambridge City, Ind., LB, $189,634, est. $192,666 8 span 556 ft. rein.-con. continuous steel beam bridge, approach grading, drainage, over Big Blue River, Marietta, Shelby Co. Bids May 19. CD 5/11.

Glaser & Taylor, Muncie, Ind., CA, $250,000 low dam and chemical bldg., MUNCIE, IND. American Water Works Co., 908 West St., Wilmington, Del. CD 7/1/49.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Hagerman Constr. Corp., 403 Strauss Bldg., Fort Wayne, Ind., LB, $2,523,679, est. $2,832,500. Three Rivers Filtration Plant addn., incl. water treatment processes, FORT WAYNE, IND. Bd. P. Wks., City Hall, Fort Wayne, Ind. Bids May 21. CD 4/3.

Gustav Hirsch Organization, Inc., 1347 W. 5 Ave., Columbus, O., CA, $207,400, equipment and wiring for new LIGHT PLANT, RICHMOND, IND. City of Richmond Light & Power Plant, Richmond, Ind. CD 4/30/51.

▲† Feeles Constr. Co., 711 Wesley Temple Bldg., Minneapolis, Minn. CA. Est. $7,500,000 addnl. imprvs. to POWDER PLANT, BARABOO, WIS. U. S. Eng., 428 Federal Bldg., Milwaukee, Wis.

Greene & Gust, 1635 Grace St., Chicago, Ill., CA, $534,400. HOUSING Project Wis. 2-D-1, BARABOO, WIS. Public Housing Admn., 201 N. Wells St., Chicago, Ill. Bids Mar. 5. CD 3/18, under LB.

Matthew Lalewicz, 3623 Canif St., Detroit, Mich. CA, $914,000. 2 story, bsmnt., brick, steel, concrete 492,000 cu. ft. Hubert SCHOOL addn., alterations, Lamphere Rd., DETROIT, MICH. City Bd. Educ., 1354 Broadway, Detroit, Mich. Bids May 6. CD 4/17.

▲ Cunningham-Limp Co., 3087 W. Grand Blvd., Detroit, Mich. LB, $3,257,000. 4 story, brick, steel, concrete, cross-shaped HOSPITAL, incl. power house, elevators. 13 Mile and Woodward Sts., ROYAL OAK, MICH. Oakland Hospital, c/o archts. CD 5/5.

▲ Atkin-Fordon Co., 7360 W. Chicago St., Detroit, Mich. CA, $1,090,000, est. $995,000. 2 story, bsmnt., brick, steel high SCHOOL, WARREN, MICH. Warren Two., School Dist. 2, Warren, Mich. Bids Apr. 20. CD 3/26.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

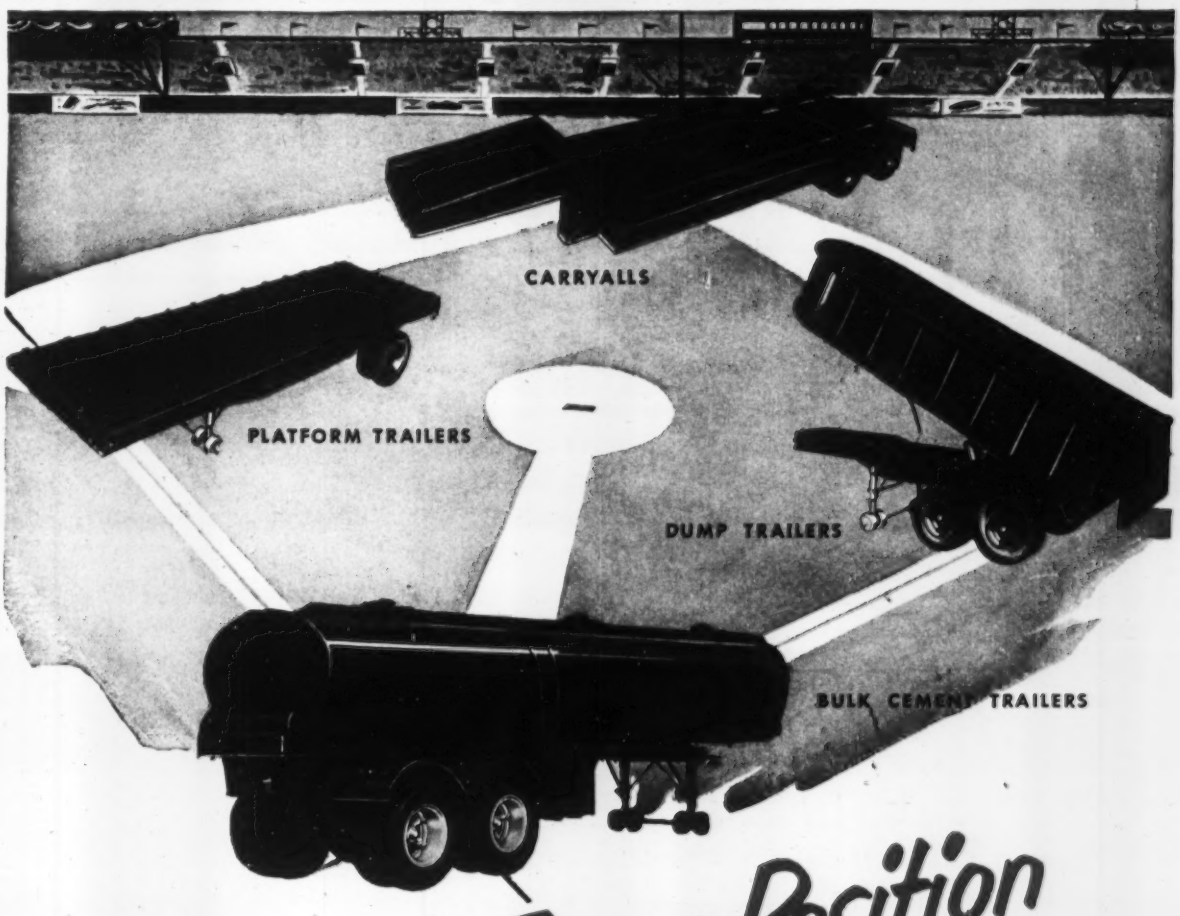
† Tex., El Paso—REPAIR SHOP—B.A. 6/18—U. S. Eng., Box 1538, Albuquerque, N. M., armament electronics (KI) radio and instrument repair shop, 2 story, 144x168 ft. masonry main bldg., Biggs Air Force Base, Inv. No. Eng-29-005-53-134. $400,000. Plans deposit $50. Extended date. CD 5/11.

BIDS ASKED—BUILDINGS

† Tex., Marshall—MAGAZINES, WAREHOUSES, etc.—B.A. 6/11—U. S. Eng., Box 61, Tulsa 2, Okla., magazines and warehouses, etc., for Longhorn Ordnance Works, Inv. No. Eng-34-066-53-126. $450,000-$900,-000. CD 3/18.

▲ Tex., Pasadena—OFFICE—B.A. 6/21—Pasadena Savings & Loan Assn., Pasadena, 2 story, bsmnt. bank and office. $1,000,000. Chase & Baer, 1202 Bissonet St., Houston, archts. CD 5/7/52.

(Continued on page 130)



Stars At Every Position

★ ★ ★ ★

FRUEHAUF Trailers

"ENGINEERED TRANSPORTATION"

FRUEHAUF VERSATILITY is no accident. It is the logical result of long years of practical experience with the hauling problems of American business. In the construction field, as in other fields, Fruehauf's extra know-how pays off in jobs done faster, better, for lower cost.

Yes, you'll find Fruehaufs will build profits for your business. Only Fruehauf provides the important service-economy feature of a *complete Trailer line* with many interchangeable parts. Only Fruehauf gives you the added protection of *nationwide factory service facilities* for readily available maintenance and repairs. Remember, Fruehauf has built more Truck-Trailers than any other manufacturer in the world. Built by Fruehauf means quality-built.

WRITE TODAY for your free copy of the 1953 Fruehauf catalog. You'll find complete illustrations and specifications.

World's Largest Builder of Truck-Trailers

FRUEHAUF TRAILER COMPANY

DETROIT 32, MICHIGAN

"One-man gang"

lets you use low-cost air anywhere — replaces expensive specialized equipment

Le Roi TRACTAIR

Combination 35-hp tractor — 105-cfm compressor

Why rent or buy expensive specialized equipment? Save your money — because, for a fraction of the cost, you can do most of your jobs with Tractair and attachments.

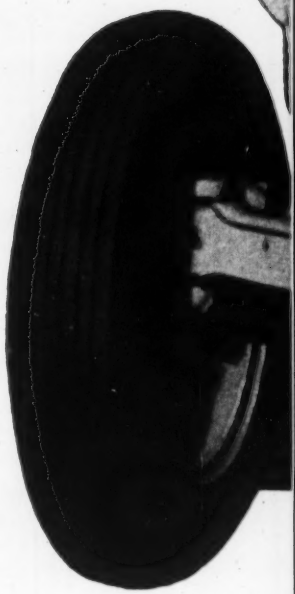
Just look at what Tractair does:

First of all, Tractair gives you low-cost air power that is self-propelled! You don't tie up trucks or men for transportation. One man and Tractair put 105-cfm of air to work where and when you need it.

Secondly, attachments multiply Tractair's usefulness: With Le Roi-CLEVELAND air tools, you can break pavement, drill rock, dig clay, tamp fill, etc. With a front-end loader and attachments (8 accessories that interchange easily), Tractair loads, lifts, backfills, plows snow, etc.

Let this "one-man gang" show you at first hand all it can do to cut your costs. Ask your nearby Le Roi distributor to take you to see Tractairs at work.

Write for job-data sheets and bulletins.



Compressors
Tractair
Rock Drills
Engines . . .

LE ROI COMPANY — MILWAUKEE 14, WISCONSIN

Plants: MILWAUKEE • CLEVELAND • GREENWICH, OHIO

T-36

Pavement Breaking — Here, Tractair runs a Le Roi-CLEVELAND Breaker. When the job is done, Tractair mops up with its front-end loader. You also can use Tractair to run a Le Roi-CLEVELAND sinker drill, clay spades, backfill tampers.

Nation-Wide Sales-Service Network

ALABAMA: Birmingham, Mobile — ARIZONA: Phoenix — ARKANSAS: Little Rock — CALIFORNIA: Bakersfield, Long Beach, Los Angeles, San Francisco — COLORADO: Denver, Grand Junction — CONNECTICUT: Hartford — FLORIDA: Jacksonville, Miami, Tampa — GEORGIA: Augusta, Decatur — IDAHO: Boise, Idaho Falls, Twin Falls — ILLINOIS: Chicago — INDIANA: Indianapolis — IOWA: Cedar Rapids, Des Moines, Waterloo — KANSAS: Great Bend, Kansas City, Pratt, Wichita — KENTUCKY: Lexington, Louisville — LOUISIANA: New Orleans, Shreveport — MAINE: Augusta — MARYLAND: Baltimore, Hyattsville — MASSACHUSETTS: Hyde Park, Newton Highlands, Worcester — MICHIGAN: Detroit, Grand Rapids — MINNESOTA: Duluth, Minneapolis — MISSISSIPPI: Jackson — MISSOURI: Joplin, St. Louis — MONTANA: Billings, Great Falls, Kalispell, Missoula — NEBRASKA: Omaha — NEW HAMPSHIRE: Manchester — NEW JERSEY: Cranford, Kingston — NEW MEXICO: Albuquerque — NEW YORK: Albany, Binghamton, Buffalo, Long Island City, Newburgh, Rochester, Saugerties, Syracuse, Whitesboro, Woodside (L.I.) — NORTH CAROLINA: Charlotte — OHIO: Cincinnati, Cleveland, Columbus, Dayton, Toledo — OKLAHOMA: Oklahoma City, Tulsa — OREGON: Portland — PENNSYLVANIA: Bethlehem, Harrisburg, Philadelphia, Pittsburgh — RHODE ISLAND: Providence — SOUTH CAROLINA: Columbia — SOUTH DAKOTA: Rapid City, Sioux Falls — TENNESSEE: Chattanooga, Knoxville, Memphis, Nashville — TEXAS: Dallas, El Paso, Houston, Lubbock, San Antonio — UTAH: Salt Lake City — VIRGINIA: Richmond, Roanoke — WASHINGTON: Seattle, Spokane — WEST VIRGINIA: Clarksburg, South Charleston — WISCONSIN: Milwaukee — WYOMING: Casper.

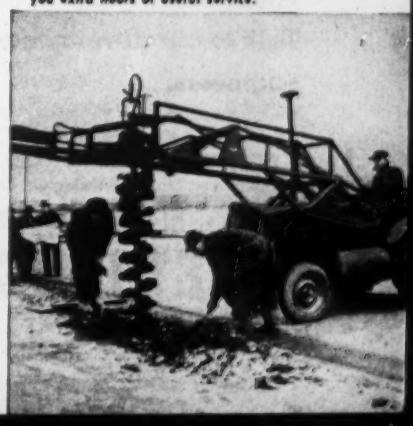
LE ROI *gives you more for your money!*

MORE UTILITY! MORE PROFIT!

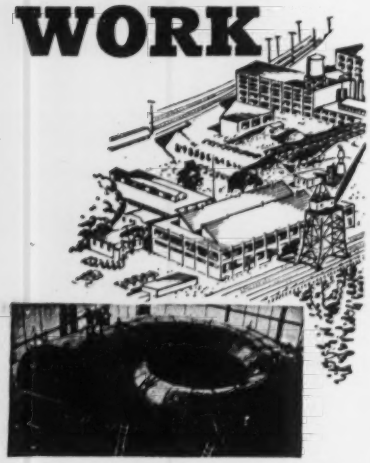
Trac-Jac — A Le Roi-CLEVELAND air-feed sinker drill mounted on Tractair. Feeding and drilling controls are within easy reach of operator. The mobility of this unit makes it ideal for mud-jacking and many other applications.

Driving Form Pins — On this highway project, Tractair puts air power to work driving form pins prior to paving. This is another example of how the usefulness of Tractair helps you to do many different jobs, reduce costs.

Earth Drilling — Tractair with utility boom operates air-motor-driven earth auger up to 16" diameter — speeds up anchor-hole digging and other earth-drilling jobs. It's another way Tractair gives you extra hours of useful service.



STEEL PLATE WORK



TURBINE CASINGS and other heavy steel plate work are fabricated at Pusey-Jones of Hot-Rolled, High-Strength, Low-Alloy Steel.

Every facility for large scale metal fabricating: — Heavy plate shop equipment — Rolls — Shears — Bending furnaces. Stress relieving furnace 33'x18'x16' up to 2100°F. Machine shop for facing, turning, and boring. 50 ton capacity gray iron foundry. Deep-water transportation on one side, the Pennsylvania RR on the other. Talk to our development engineers.

Metals Fabrication Division
THE PUSEY AND JONES CORP.
502 E. Front Street, Wilmington, Del.
Established 1848

PUSEY JONES

(Continued from page 126)

▲ Minn., Amoka—SCHOOL—B.A. 6/23—Bd. Educ., J. M. Wennerlund, clk., 2 story, part bsmnt., 250x300 ft., H-shaped high school. $1,000,000. Plans deposit $50. Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, archts. CD 10/22.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

L. Pohl, Nevada, Mo. CA $569,852, dam.;
Walters Sand Co., Manhattan, Kan. CA $49,841, water line;
Lock Joint Pipe Co., Turner, Kan. CA $146,181. pipe, EL DORADO, KAN. City. El Dorado, Kan. Bids May 12. Grand total $765,874. CD 4/30.

TEXAS—State Hy. Comn., Austin,
W. Paul Carlisle, 6434 Orchid Lane, Dallas, Tex., LB $209,879, K.C.S. R. R. underpass and approaches 0.143 mi. Hy. U. S. 82, Proj. FG 415 (5), Bowie Co.;
Uvalde Constr. Co., P.O. Box 3027, Dallas, Tex., LB $207,271, M.K. T R.R. underpass and approaches 2.074 mi. Hy. ST. 78, Proj. S 1530 (1) and C 281-3-9, Dallas Co. Bids May 19. CD 5/1.

▲ TEXAS—State Hy. Comn., Austin,
Cage Bros., Rte. 10, Box 46, San Antonio, Tex., LB $223,921, flexible base and two course surf. tr. 14.356 mi. Hy. SH 16, Proj. C 290-3-8. Gillespie Co.
Harry Campbell, Rte. 5, Box 68-A, Abilene, Tex., LB $97,737, grading, structures, base, surf. 13.15 mi. Hy. FM 1312, Proj. S 1811 (1) and S 1639 (1), Gaines Co.;
W. S. Crawford Co. & Adams Bros., 5350 Montrose Dr., Dallas 9, Tex., LB $86,368, grading, structures, base and surf. 5.61 mi. Hy. FM 977, Proj. F 1147-3-1, Leon Co.;
E. W. Hable & Sons, Corsicana, Tex., LB $170,518, grading, structures, base, surf. 10.6 mi. Hy. FM 1486, Proj. R 1416-3 and 3, Montgomery Co.;
Neb. B. Hoffman, 617 Fort Worth Club Bldg., Fort Worth, Tex., LB $76,835, seal coat 137.341 mi. U. S. 80, 83, 87, 180, SH 36, 92, 101, 350, FM 57, 126, 1081, 614, 820, 1226, 1229 and 1230, Mitchell, Jones, Howard, Stonewall, Taylor, Borden, Nolan and Haskell Counties;
M. B. Killian, 4600 Broadway, San Antonio, Tex., LB, $110,501, flexible base, asph. pavement 1.301 mi. Hy. U. S. 81, Proj. F 273 (14), Frio Co.;
John J. Leslie, Bailey, Tex., LB $71,889 grading, structures, base, surf. 5.501 mi. Hy. FM 1753, Proj. R 1709-2-2, Fanning Co.;
R. W. McKinney, P.O. Box 190, Nacogdoches, Tex., LB $299,348, grading, structures, base surf. and T & N.O. overpass 3.032 mi. U. S. 175, FG 189 (9) and F 136 (10) Kaufman Co.;
McMillan-Burkett Constr. Co., P.O. Box 450, Texarkana, Tex., LB $101,462, grading, structures, base, surf. 5.42 mi. Hy. FM 559, Proj. C 1020-1-4, Bowie Co.;
Reynolds & Huff, P.O. Box 88, Tyler, Tex., LB $80,314 grading, structures, base, surf. 6.95 mi. Hy. FM 323, Proj. S 132 (2), Anderson Co.;
South Texas Constr. Co., P.O. Box 3536, Corpus Christi, Tex., LB $183,664, wid'n., grading, structures, surf. shoulders, 13.09 mi. Hy. U. S. 281, Proj. F 1099 (1), Live Oak Co.;
Trotti & Thompson, Inc., P. O. Box 70, Beaumont, Tex., LB $368,030, c. conc. pavement wid'n. and b. conc. 9.648 mi. Hy. U. S. 69, 96, and 287, Proj. C 65-8-43, Jefferson Co.;
T. R. Vardeman & Son, P.O. Box 485, Nacogdoches, Tex., LB $96,458, b. conc. 15.447 mi. U. S. 59, 69, SH 103, Proj. C 176-1, 2 and 3, 25, 28 and 22, etc. Angelina and Nacogdoches Counties. Bids May 19. CD 4/27, 5/1, 5/6.

TEXAS—State Hy. Comn., Austin,
Hugh McMillan, P. O. Box 1227, El Paso, Tex., LB $62,379, Alpine Creek Bridges and approaches 0.208 mi. Hy. St. 118 and 223, Proj. 498-1-4 and C 358-2-7, Brewster Co.;
R. C. Buckner, P. O. Box 609, Jacksonville, Tex. LB $408,559, Hogs, Repress, Irons, Martins, Caddo and No Name Creek bridges and approaches 1.78 mi. Hy. US 59, Proj. F 482 (3), F 192 (7), etc., Panola and Harrison Counties;
Cooper & Woodruff, 222 Mays Bldg., Amarillo, Tex., LB $253,751, F. W. & D. and Q. A. & P. overpass and approaches 2.424 mi. Hy. U. S. 287, Proj. F 533 (11), Hardeman Co. Bids May 20. CD 5/6, 5/1.

TEXAS—State Hy. Comn., Austin,
W. R. Aldrich & Co., P. O. Box 1751, Baton Rouge, La. CA. $611,206, grading, structures, 15.208 mi. Hy. SH 73. Proj. F 1052 (11), Jefferson Co. Bids May 20, awarded May 22. CD 5/26, under LB.
Joe Bland Constr. Co., Box 1158, Austin, Tex., LB $69,867, sanitary sewers, in Shoal Creek from W. 49½ St. to Nortland Dr., AUSTIN, TEX. City, City Hall, Austin, Tex. Bids May 19. CD 11/15/50.

▲ TEXAS—State Hy. Comn., Austin,
Austin Contg. Co., P.O. Box 1590, Dallas, Tex., LB $110,440, grading, structures, base, surf. 5.105 mi. Hy. FM 121, Proj. S 442 (2), Grayson Co.;
Austin Contg. Co. & Austin Bridge Co., P.O. Box 1590, Dallas, Tex., LB $455,798, flexible base, two course surf. tr. 9.704 mi. Hy. SH 95, Proj. S 198 (1), Williamson Co.;
Cage Bros., Rte. 10, Box 46, San Antonio, Tex., LB $76,084. grading, structures, base, surf. 2.697 mi. Hy. FM 770, Proj. R 1096-3-1, Liberty Co.; LB $63,790, grading, structures, base, surf. 7.763 mi. Hy. FM 945 and 2025, Proj. R 756-52 and C 1459-2-1, San Jacinto Co.;
Dew Constr. Co., Inc., P.O. Box 641, Tyler, Tex., LB $78,019, b. conc. 12.32 mi. Hy. U. S. 59 and SH 146 Proj. C 176, 3, 4 and 5-23-23 and 24, Angelina and Polk Counties;
Dodds & Wedegartner, Inc., San Benito, Tex., LB $161,484, grading, structures, base, surf. 11.343 mi. Hy. FM 1847 and 1846, Cameron Co.;
J. R. Fanning, P.O. Box 1047, Lubbock, Tex., LB $85,097. grading, structures, base, surf. 5.461 mi. Hy. FM 1082, Proj. R 975-22, etc., Jones Co.;
J. R. Fanning & Henry Stafford, P.O. Box 1047, Lubbock, Tex., LB $155,027, grading, structures, base, surf. 14.519 mi. Hy. FM 2080, 1843 and 1842. Proj. S 1862 (1), Lamb Co.;
E. W. Hable & Sons, Corsicana, Tex., LB $73,950. pavement wid'n., curb and gutter, storm sewers, 0.607 mi. Hy. U.S. 96 and FM 92, Proj. C 65-5-33 and C 703-2-3, Hardin Co.;
C. R. Heidlberg, W. Larissa St., Jacksonville, Tex., LB $108,688, grading, base, surf. 21.945 mi. Hy. FM 977 and 3. Proj. V 552-1-6 and V 1147-1-3, Leon Co.;
Ernest Loyd, P.O. Box 1120, Fort Worth, Tex., LB $289,924, widen structures, flexible base surf., seal coat and hot mix b. conc. pavement 22.168 mi. Hy. U.S. 87 and FM 297, Proj. C 40-3-19, C 41-1-13 and C 794-2-5, Dallam and Hartley Counties; LB $60,499, flexible base, two course surf. tr. 4.986 mi. Hy. U.S. 87, 377 and FM 1955, Proj. C 71-2-16 and C 1972-1-2, McCulloch Co.;
McKenzie Constr. Co., P.O. Box 806, San Antonio, Tex. LB $203,282, base and b. conc. 2.388 mi. Hy. U.S. 59, Proj. C 88-4-13, Victoria Co.;
Holland Page, P.O. Box 1181, Austin, Tex., LB $434,472, flexible base, foundation course, 2 course surf. tr. and b. conc. 15.403 mi. Hy. U.S. 190, Proj. F 359 (6), F 359 (5) and F 359 (7), Milan and Bell Counties; LB $94,287, b. conc. 12.949 mi. Hy. U.S. 90, SH 24, Proj. C 28-9-27; C 368-1-2-27-11, Orange, Chambers and Jefferson Counties;
H. B. Zachary Co., P.O. Box 2570, San Antonio, Tex., LB $113,178, grading, structures, base, surf. 10.075 mi. Hy. FM 1329 and 1869, Proj. R 1201-2-1, R 1201-3-2, Williamson and Bell Counties. Bids May 20. CD 5/4, 5/1, 4/30, 4/27, 5/6, 5/8.
O'Rourke Constr. Co., 1001 Commerce St., Dallas, Tex., LB $731,000, est. $200,000-$500,000, rein.-con. and forms, structural steel hangar, GRAND PRAIRIE, TEX. Chance Vought Aircraft, Div. of United Aircraft Corp., Box 5907, Dallas, Tex. Bids May 20. CD 5/13.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ G. F. Cook Constr. Co., 2833 Lyndale Ave. S., Minneapolis, Minn. CA general contract substructure and superstructure POWER HOUSE (2 units) near Nichols, south side of Minnesota River between Cedar and Lyndale Aves., MINNEAPOLIS, MINN. Northern States Power Co., 15 S. 5 St., Minneapolis, Minn. Bids May 4. CD 4/22.
J. J. Altman & Co., 1764½ State St., East St. Louis, Ill. CA Est. $700,000, general contract 2 story, ground floor, 61x147 ft. and 101x144 ft., brick, steel, stone glass blocks High SCHOOL on 15 acre tract, CAPE GIRARDEAU, MO. Greater Cape Girardeau High School, c/o Rev. Marion F. Forst, pastor, St. Mary's Parish, and Rev. Joseph P. Dyra, CM, pastor St. Vincent's Parish, Cape Girardeau, Mo. Bids Apr. 21. CD 4/8.
Metropolitan Constr. Co., 306 Armour Rd., North Kansas City, Mo. CA Est. $600,000. 43 RESIDENCES, sewage disposal plant, 3,750 ft. sanitary sewers, 51 and Michigan Sts., NORTH KANSAS CITY, MO. Antioch Gardens, 306 Armour Rd., North Kansas City, Mo.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† Nev., Las Vegas—HANGARS—B.A. 6/19—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., two aircraft maintenance hangars, utilities, Nellis Air Force Base, ENG-04-353-53-146. $560,000. CD 12/10.
† Arizona-Nevada—SWITCHES, etc.—B.A. 6/30—Bureau Reclamation, Bldg. 53, Denver Federal Center, Denver, Colo. furnishing, del. f.o.b. cars shipping or f.o.b. cars at Eloy, Ariz., switches, lightning arresters for ED-2 and ED-4 sub-stations, Davis Dam Project, Spec. DS 3965. L. N. McClellan, ch. engr.
▲† California—B.A. About 7/28—Bureau Reclamation, Dpt. Interior, Old P. O. Bldg., Sacramento, Monticello Dam on Putah Creek, 39 mi. west of Sacramento, Napa, Yolo and Solano Counties. $30,000,000. CD 7/31/52.

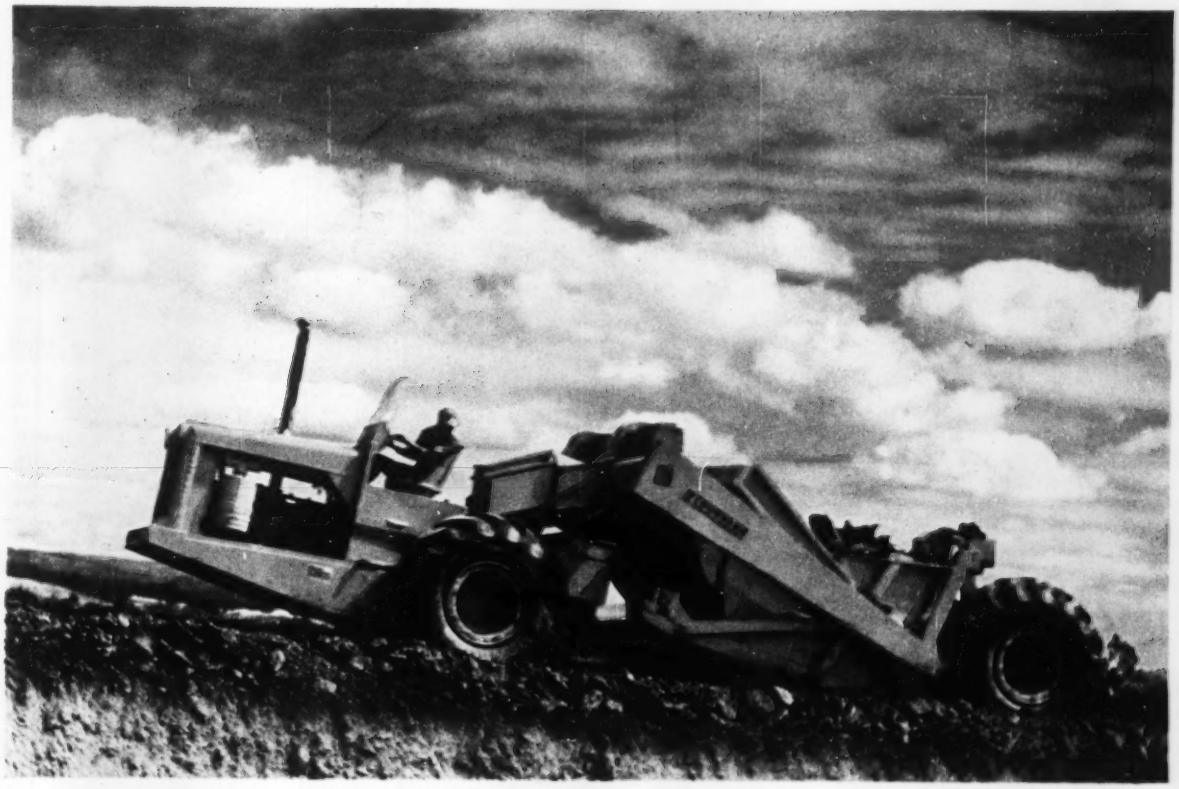
HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ WASHINGTON—State Hy. Comn., Olympia,
D-H Paving Co., Vancouver, Wash., LB, $303,186 b. conc. and c. conc. 0.234 mi. Hy. 1 Vancouver Freeway Instate Bridge to S St., F.A.P. UI-001-1 (22), Clark Co.;
Bloomquist Logging Co., Carson, Wash., LB, $64,427, draining, grading, surf. 2.121 mi. Kalama River Road revision F.A.S. AS 0711 (1), Cowlitz Co.;
Ellis Constr. Co., Ephrata, Wash., LB, $227,730, bit. 7.709 mi. Hy. 7 Burke to Quincy, Section 2, Grant Co.;
McAtee & Heathe, P.O. Box 4083, Station B, Spokane, Wash. LB, $69,880, stockpiling sand and crushed stone surf., b. conc. 5.92 mi. Hy. 2, Easton vicinity, Kittitas Co.;
Goetz & Brennan, Seaboard Bldg., Seattle 1, Wash., LB, $507,148, bit., rein.-con. girder bridge 14.711 mi. Hy. 7, Grant Co. line to Odessa F.A.S. S 0994 (1), Lincoln Co.;
R. A. Heintz Constr. Co., 8101 N.E. Union Ave., Portland, Ore., LB, $549,845, clearing, draining, grading, surf. 4.219 mi. Hy. 12, Palix River south, FAP F 044-1 (1), Pacific Co. Bids May 19. CD 5/6.

(Continued on page 133)

SWITCH TO GM DIESEL



A NEW LOOK AT ENGINE PERFORMANCE

If you think all engines "perform" about the same, check this fact: A General Motors 6-cylinder Diesel operating at 1800 rpm produces *180 power strokes per second*. A 4-cycle six produces only *90*.

We won't say this feature makes a GM Diesel accelerate twice as fast as a 4-cycle engine, but it does mean a GM Diesel gets a load moving quicker and keeps it moving when tough going would slow down a 4-cycle engine.

It means faster work cycles with GM Diesel powered equipment—increased output per unit and per man hour. That's one reason contractors specify GM Diesel power more than any other.

How about equipment availability? The simple design of the GM Diesel fuel system eliminates one of the main causes of down time—high pressure pumps and fuel lines. And maintenance costs? Compare the price of replacement parts and you'll see why GM Diesels cost far less to maintain.

To get the most from your equipment dollars, specify machines with General Motors 2-cycle Diesel power. Available in more than 750 models of equipment built by over 150 different manufacturers.

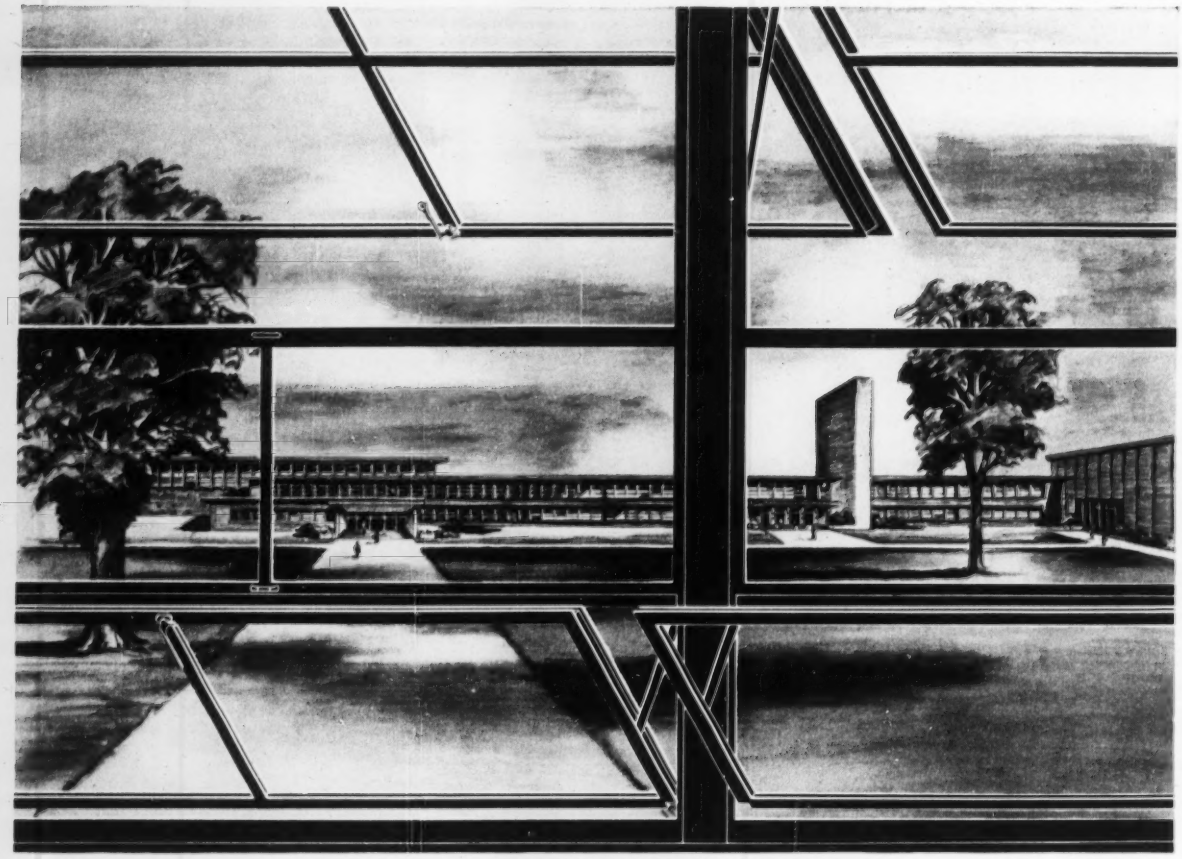
Single Engines . . . 16 to 275 H.P. *Multiple Units . . . Up to 840 H.P.*

GM
GENERAL MOTORS
DIESEL
POWER

DETROIT DIESEL
ENGINE DIVISION
GENERAL MOTORS • DETROIT 28, MICHIGAN

CECO HAS ACHIEVED AN EXACTNESS IN INTERMEDIATE WINDOW DESIGN THAT MEETS THE NEED OF THE PRESENT... SETS THE PATTERN FOR THE FUTURE

It's easy to make a cheap product and it's easy to over-manufacture. But it requires ingenuity and infinite skill to create the ideal of quality and selection without compromising value or indulging extravagance.



Only CECO offers you 1¼" and 1½" intermediate windows

For years Ceco engineers have been experimenting so as to give you the "just right" window. Today we can announce mission accomplished in the two new Ceco creations . . . 1¼" Intermediate Windows and 1½" Intermediate Windows. For here are two windows that can be adapted to any building problem where intermediate design is indicated. The 1¼" window gives you weight and strength plus beauty at a *sensible* price. Hardware is handsome bronze lacquer finish. The 1½" window assures greater strength and rigidity, *adequate* for any need, longest trouble-free service, will outlast any structure. New beauty is reflected in rich solid bronze hardware. In these new windows Ceco has reached deeply into the future to bring you truly balanced design plus an innovation in simplicity . . . an exactness you can find nowhere else.

In construction products **CECO ENGINEERING** *makes the big difference*

CECO STEEL PRODUCTS CORPORATION

Offices, warehouses and fabricating plants in principal cities
General Offices: 5601 W. 26th St., Chicago 50, Illinois

CECO PRE-PLANNING CONSULTATION SERVICE

Ceco Product and Design Specialists will assist you in the application of Ceco building products at the pre-planning stage . . . Call your nearest Ceco office for overnight consultation service. CECO

(Continued from page 130)

▲† **U. S. Eng.**, 4735 E. Marginal Way, Seattle 4, Wash. cancelled bids to have been opened June 30 install powerhouse equipment and complete powerhouse and appurtenances at Chief Joseph Dam, Bridgeport, CIVENG-45-108-53-68, WASHINGTON. CD 5/7.

OREGON—State Hy. Comn., Highway Bldg., Salem.

Peter Kiewit Sons Co., Box 491, Longview, Wash. CA $86,410, oiling 8.37 mi. Cotton Wood Creek and West Side Roads, FAP S-100 (2) and S 101 (2), Lake Co.; CA $984,239, grading 2.1 mi., paving 1.01 mi. Oregon Coast Hy. FAP BFI-124 (4), Curry Co.;

N. A. Toole Constr. Co., 1211 S. W. 3 St., Ontario, Ore., CA $74,275, rock production on Fremont and Lakeview-Burns Hys., Lake Co.;

Parker-Schram Co., Builders Exchange Bldg., Portland, Ore., CA $159,718, grading 4.68 mi., paving 5.74 mi., Sauvie Island, FAP S-135 (1), Multnomah Co.;

J. M. Arenz, 1601 N. E. Columbia Blvd., Portland, Ore. CA $342,813, grading 7.28 mi., paving 7.75 mi., John Day Hy., FAP 92 (4), Grant Co.; CA $332,061, grading, paving 10.28 mi. John Day Hy. FAP F-92 (4), Grant Co.;

Kuckenberg Constr. Co., 11104 N. E. Holman St., Portland, Ore., CA. $755,270, grading 7.12 mi., 50 ft. concrete bridge, Columbia River Hy. FAP BF-221 (2), Columbia Co.;

United Paving Co., Box 1017, Edmonds, Wash., CA $93,734, paving 3.78 mi. Youngs River Loop County Rd FAP S-134 (1), Clatsop Co. Grand total $2,828,520. Bids May 18, R. H. Baldock c/o owner, engr.

▲ **Bechtel Corp.**, 220 Bush St., San Francisco, Calif. and **Morrison-Knudsen Co., Inc.**, Box 450, Boise, Idaho, CA, $8,500,000 Vermillion Dam on Mono Creek, Fresno Co., CALIFORNIA, Southern California Edison Co., 601 W. Fifth St., Los Angeles, Calif. Awarded May 21. CD 9/12/51.

† **Peter Kiewit Sons Co.**, 345 Kieways Ave., Arcadia, Calif., LB, $964,844, flood control work Los Angeles, CIVENG-04-35-35-30, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids May 21. CD 5/4.

▲ CALIFORNIA—State Div. Hys., 120 S. Spring St. Los Angeles,

Guy F. Atkinson Co., P. O. Box 259, Long Beach, Calif. CA, $3,389,766, grading, paving, bridges 6 mi. between San Dimas Ave. and San Bernardino Co. line Los Angeles Co., awarded May 21;

Griffith Co. 1050 S. Broadway, Los Angeles, Calif., CA, $610,762, grading, surf. 3.5 mi. between Rt. 2 and Oceanside, etc., San Diego Co. Bids Apr. 30, awarded May 14. CD 5/8, under LB.

(Continued on page 135)

Everybody Benefits WITH Permalite

—AS THE AGGREGATE IN CONCRETE, FOR INSTANCE

ARCHITECT— Permalite/concrete takes the handcuffs off the architect with its *light weight*—1/7 to 1/2 the weight of conventional concrete. Freed from this dead load, the architect has greater freedom in designing for required strength with minimum steel requirements.

BUILDER— Permalite/concrete takes a lot of weight off the builder's mind, too. *Lighter,* it's easier and quicker to handle, speeds construction. Advantages over other aggregates in the same weight class—uses less water, *shrinks less* on drying, resists thawing and freezing, has *lower absorption.*

TENANT— Tenants may not know why, but they're *more comfortable* in a Permalite/concrete building, because of the *added insulation* and *soundproofing* afforded by Permalite/concrete over conventional concrete—quieter offices, more even room temperatures.

BUILDING OWNER — Permalite/concrete gives him more usable building space. The steel structure can be lighter and the curtain and partition walls can be thinner, and still meet *fire-resistance* requirements. He gets more rentable floor space and, if necessary, *more floors* on the same foundation. Easier to heat, too.

To get the full story on Permalite's many advantages, send today for your free bulletin on Permalite, the largest-selling perlite aggregate in the world. Write Great Lakes Carbon Corporation, Dept. H-346—612 So. Flower St., Los Angeles 17.

Dependable GREAT LAKES **Permalite**®

THE LARGEST-SELLING PERLITE AGGREGATE IN THE WORLD

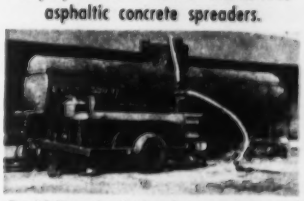
PROCESSED FROM SOCORRO PERLITE ONLY BY THESE EXCLUSIVE PERMALITE LICENSEES OF GREAT LAKES CARBON CORPORATION

Indoken Perlite Company Cincinnati 17, Ohio	William J. McCormack Sand Co., Inc. New York, New York	Airlite Processing Corp. of Fla. Scottsburg, Indiana	MacArthur Company St. Paul 4, Minn.
Perlite Products Corp. Dallas, Texas	Pennsylvania Perlite Corp. Allentown, Pennsylvania	New Jersey Perlite Corp. Newark, New Jersey	McClure & Erickson Corp. Los Angeles, California
Perma-Rock Products, Inc. Baltimore 30, Maryland	West Indies Perlite Mfg. Co., Inc. Havana, Cuba	The Whittemore Company Roslindale 31, Mass.	Virginia Perlite Corp. Hopewell, Virginia

GRACE Asphalt and Compaction Equipment

3 sweeper models, axle, engine or tractor powered.

Chip spreaders 8' to 12' width. Also asphaltic concrete spreaders.



Rapid Fire circulating heaters heat and unload large tanks of asphalt.

Sheepsfoot Rollers 250 to 600 psi.

Rapidspray Maintenance Distributors. Also heaters for production melting of barreled asphalt.

Pneumatic rollers 7 to 50 tons.

W. E. GRACE MFG. CO.

6015 S. LAMAR DALLAS, TEX.

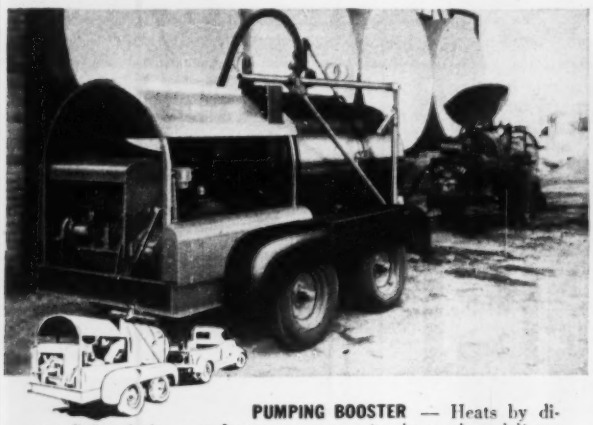
"You get FAST ACTION — to the job... on the job"

... with Cleaver-Brooks oil and bitumen heating equipment!

These self-contained mobile units can be ready to pump, heat and circulate bituminous materials in 20 minutes or less after arrival

If your job can be reached on wheels, any one of these famous Cleaver-Brooks mobile heating units can save you plenty of time and money. Each can be transported as easily as you drive your car . . . put into operation with minor connections — by only one man! Their proven high efficiency, man hours saved, plus elimination of field problems can be important factors in your profit picture. That's why you'll want to know more about famous Cleaver-Brooks Tank-Car Heaters . . . Pumping Boosters . . . and "Deuce" combination tank-car heater and pumping booster. It's the mobile bituminous team that does more work . . . with faster heat, higher temperatures and with less fuel. Write for details. Cleaver-Brooks Company, Dept. G, 393 E. Keefe Ave., Milwaukee 12, Wisconsin.

TANK CAR HEATER — Shoots steam through tank-car coils at 125 lbs. pressure in 20 minutes or less from a cold start. Can be kept going at full tilt all day. Oil firing plus extra high-heat transfer design, assure extra fuel savings. Turbine-type condensate return means less water required. Available in two-car (28 BHP) and three-car (42 BHP) sizes, trailer and skid-mounted models. Ask for Bulletin RM-110.



PUMPING BOOSTER — Heats by direct firing 4 times as fast as steam, recirculates, then delivers bituminous materials directly to distributor. Heats only the amount of material required — not necessary to heat entire car. No steam or water required for operation. Has self-contained fuel and gasoline tanks. Available in two sizes, trailer and skid mounted: No. 1A Booster heats approx. 300 GPM temp. rise 25°-35°F; No. 2 Booster heats approx. 350 GPM temp. rise 45°-55°F. Ask for Bulletin RM-107.

"DEUCE", COMBINATION TANK CAR HEATER AND PUMPING BOOSTER — It's a portable steam boiler *and* direct-fired heater mounted on a single frame. Look at this three-job versatility! "Deuce" steam preheats one car to pumpable consistency while circulating and heating a second car to application temperatures. Same unit also pumps and loads distributor or transfer truck. Ask for Bulletin AD-104.

Cleaver-Brooks

Pioneers and Originators of Self-Contained Boilers, Tank-Car Heaters, Pumping Boosters, The "Deuce" and "Peak-Temp"

(Continued from page 133)

▲ **Guy F. Atkinson Co.,** Box 259, Long Beach, Calif., CA, $1,199,215, wharf at Pier C, Berths 24, 25, and 26 Outer Harbor, LONG BEACH, CALIF. Long Beach Harbor Dpt., 1333 El Embarkadero St., Long Beach, Calif. Bids May 14. CD 5/22, under LB.

▲† **McDonald Bros.,** 6014 W. Adams Blvd., Los Angeles, Calif., CA, $1,106,843, Schedule A, barracks, mess-administration bldg., etc. Edwards Air Force Base, ENG-04-353-53-123, MUROC, CALIF. U. S. Eng., 151 S. Figueroa St., Los Angeles, Calif. Bids May 12, awarded May 19. CD 5/18, under LB.

▲† **Parish Bros.,** P. O. Box 6, Benicia, Calif., LB, $1,147,086, runway strengthening, widening, Spec. 1780, TRAVIS AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids May 20. CD 5/8.

▲† **Zoss Constr. Co.,** P. O. Box 1167, Hollywood, Calif., CA, $2,290,765, maintenance hangar, paving, utilities Spec. 1775, TRAVIS AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids May 7. CD 5/19, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **M. & K. Corp.,** Financial Center Bldg., San Francisco, Calif., LB, $2,374,732, 8 story OFFICE, LABORATORY for Dept. Public Health, BERKELEY, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids May 19. CD 3/31.

▲ **Wm. P. Neil Constr. & Maintenance Co.,** 2922 S. Sunel Dr., Los Angeles, Calif., CA, $1,000,000 2 story 400x650 ft. concrete WAREHOUSE and OFFICE, LOS ANGELES, CALIF. Continental Assurance Co., 310 S. Michigan St., Chicago, Ill. Albyn Mackintosh, 306 N. Vermont Ave., Los Angeles, Calif., engr. Earl G. Boehm, 9905 La Docena Lane, Rivera, Calif. archt.

CANADA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **ALBERTA**—Province of Alberta, Parliament Bldgs., Edmonton,

New West Construction Co. Ltd., Edmonton, Alta., CA, $849,842, grading 17 mi. Hy. 16 from Gallaoway to Obed;

Park Bros. Ltd., Spirit River, Alta., CA, $199,656 grading 18 mi. Hy. 35, from North Star to Hotchkiss;

Mannix-O-Sullivan Paving Co., Calgary, Alta., CA, $777,847, stab. grav. base course 18 mi. Hy. 2, from Berwyn to Whitlaw, asph. hot plant mix surf. Hy. 34, from Smoky River to Junction Hy. 2, awarded May 20;

Standard Gravel & Surfacing, 5340 1 St. W., Calgary, Alta., CA, $1,355,275, stab. grav. base course 40 mi. Trans-Canada Hy. 1 from Brooks to Suffield;

W. C. Wells Constr. Co. Ltd., 10571 115 St., Edmonton, Alta., CA, $1,262,296, stab. grav. base 31 mi. from Bassacno to Brooks on Trans-Canada Hy. 1, awarded May 19. Grand total $4,444,916. CD 12/3/43.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Kennett Constr. Ltd.,** 1630 W. 5 Ave., Vancouver, B.C., CA, $1,571,400, 3 story, rein.-con Tubercular Mental Patients care and treatment HOSPITAL, ESSONDALE, B. C. B. D. Govt., Parliament Bldgs., Vancouver, B. C. Bids Apr. 22, awarded May 21 CD 5/5, under LB.

▲ **Kenney Constr. Co. Ltd.,** Box 480 Yarmouth, N. S., CA, $1,410,983, 4 story, bsmnt., 135x200 ft. rein.-con., brick, Naval TRAINING SCHOOL, HALIFAX, N. S. Defence Constr. Ltd., 1032 Gottingen St., Halifax, N. S. Bids May 17, awarded Apr. 30. CD 4/15, under LB.

Major Hill Realties Ltd., 18 Rideau St., Ottawa, Ont. CA, $451,250, 1 story, 200x500 ft., rein.-con. WAREHOUSE, Hurdman's Bridge, OTTAWA, ONT. M. Loeb Ltd., 51 Besserer St., Ottawa, Ont.

▲ **Canadian Bechtel Ltd.,** 44 King St. W., Toronto, Ont., CA, $1,000,000, SYNTHETIC LATEX UNIT, open type SARNIA, ONT. Dow Chemical Co. of Canada Ltd., 204 Richmond St. W., Toronto, Ont. Awarded May 19. CD 4/18.

Gregoire Perrault, Inc., 198 St. Joseph St., Joliette, Que. LB, $298,000, stone; $391,100, brick; $421,000, granite CHURCH and PRESBYTERY, St. Pierre St., JOLIETTE, QUE. Parish of St. Pierre Rev. W. Gervais, cure, Joliette, Que. Bids May 8. CD 5/1.

J. H. Dupuis Ltd., 4324 Jeanne d'Arc Ave., Montreal, Que., CA $610,000, 3 story, bsmnt., 132x216 ft., PLANT addns., Viau St. near Ontario St. E., MONTREAL, QUE. Viau Ltee, 4591 Ontario St. E., Montreal, Que. CD 4/28.

J. Serrentino Constr. Co. Ltd., 6660 Decarie Blvd. Montreal, Que., CA, $550,000. 1 story PLANT and OFFICE, MONTREAL, QUE. Canadian Aviation Electronics Ltd., 8280 St. Lawrence Blvd., Montreal Que. Greenspoon, Freedlander & Dunne, 4151 Sherbrooke St. W., Montreal, Que., archts.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **J. A. Jones Constr. Co.,** Medical Arts Bldg., Seattle, 4, Wash., LB. $476,600, est. $385,478, constr. underground aqua conversion system for Aircraft fueling sys., ENG-95-507-53-72, Elmendorf Air Force Base, ALASKA: U. S. Eng., Anchorage, Alaska. Bids May 19. CD 4/15.

Proposed Projects

WATER SUPPLY

Ga., Bremen—Town, WW imprvs. $150,000. Vinson & Co., 30 14 St. N. E., Atlanta, consult. engrs.

▲ **Ga., Jonesboro**—Clayton Co., c/o Chief Comr., Jonesboro, WW system, Vinson & Co., 30 14 St. N. E., Atlanta, consult. engrs.

Ind., Whitestown—Town Bd., J. R. Hill, pres. Whitestown, w. w. sys. $116,000. Paul J. Kleiser, 671 Tippecanoe St., Terre Haute, consult. engr.

N. Y., Attica—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, water supply imprvs., Attic Prison for Dpt. of Correction, $125,000.

Tex., Garland—City, City Hall, voted bonds May 12, Phase 5, water storage, supply, $100,000; Phase 6, new water lines sys. rehabilitation, $250,000.

Tex., Longview—City, City Hall, cancelled bond election of May 30, WW sys. rehabilitation, $55,000; water mains, distr. lines, $125,000. CD 5/7.

▲ **Tex., Tyler**—City, voted bonds May 12, (a) water main to Bryan Heater area, $175,000, (b) 1 m. g. steel water elevated tank, $120,000, (c) addnl. water mains, old and all existing areas, $305,000, (d) water mains in new area, $275,000, (e) some water main connection in General Electric plant area, $200,000, (f) WW sys. rehabilitation, $175,000. CD 4/22.

SEWERS, WASTE DISPOSAL

Calif., San Pablo—San Pablo Sanitary District voted $960,000 bonds, sewage treatment plant, hospital sewer connection line. CD 3/30.

Colo., Denver—City and Denver Co., City and County Bldg., Sanitary Sewer District No. 318, sanitary sewers, appurtenances. $124,700. Terry Owens, City and County Bldg., Denver, consult. engr.

Conn., Stratford—Town Council, Office Town Manager, Town Hall, trunk line sewers, Warwick Ave. to Birdseye St. $400,000. Albertson & Assocs., 110 William St., New York, N. Y., consult. engrs.

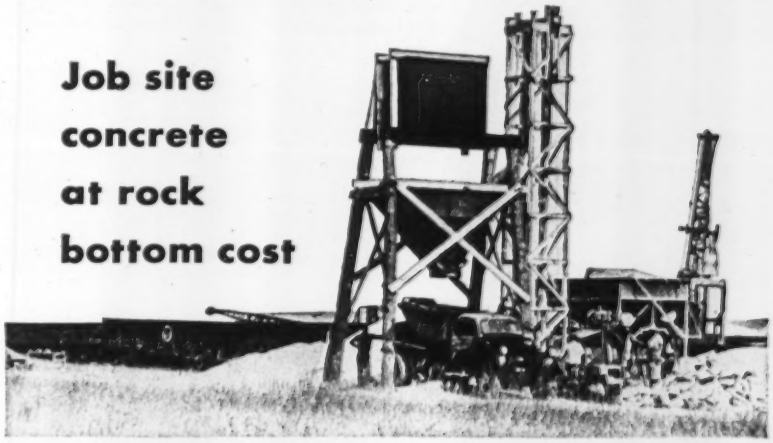
Fla., Treasure Island—Town, voted bonds, sanitary sewer imprvs. $155,000. Clifford-Cooper & Assocs., 101 Westward Dr., Miami Springs, consult. engrs.

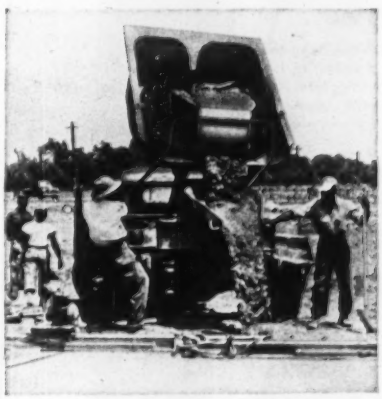
▲ **Ga., Jonesboro**—Clayton Co., c/o Chief Comr., Jonesboro, sanitary sewerage sys., Vinson & Co., 30 14 St. N. E., Atlanta, consult. engrs.

Ill., Villa Park—Salt Creek Drainage Basin, Park Ave. at Rte. 83, sanitary sewers and sewage treatment plant. $185,000. Walter Deuchler, 63 S. LaSalle St., Aurora, consult engr.

(Continued on page 138)

Job site concrete at rock bottom cost





The mixing plant you see above is not fancy. But it produced 100 yards of *top quality* concrete a day.

The Dumpcrete you see at left is a *rugged low-cost* unit that hauled every load 8 *miles*, and delivered uniform concrete to the exact spot it was needed.

"We knew from experience what our 6 Dumpcretes could do," reports H. G. Helgerson, Pres. of McKoy Helgerson of Greenville, S. C. "So we set up the plant at a railroad siding 8 miles from our job at the Parris Island Marine Base."

"Our central plant and the Dumpcretes made a perfect team for handling the scattered pours," he says. "We're money ahead, because we've compared the costs."

MAXON DUMPCRETE

Fastest from Plant to Pour

The Maxon Construction Co., Inc., Manufacturing Div.
671 Talbott Bldg., Dayton 2, Ohio

Send Booklet: "12 Ways to Set Up for Central Mixing"

Name_____

Firm_____

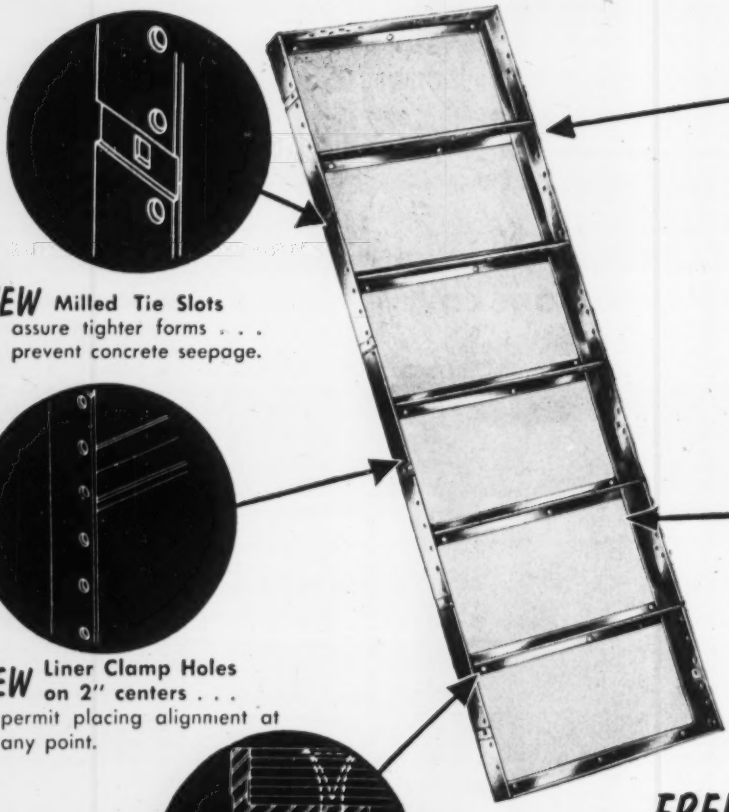
Address_____

Better Now Than Ever...

The New UNI-FORM Panels®

NEW Stronger Frame!

(Patent Applied for)



NEW **Milled Tie Slots** assure tighter forms . . . prevent concrete seepage.

NEW **"T" angle struts** develop greater strength, rigidity.

NEW **Liner Clamp Holes on 2" centers** . . . permit placing alignment at any point.

NEW **Special section** cradles and protects plywood edges . . . assures longer life . . . maximum reusage

NEW **Special split rivets** secure plywood to steel frame. Reverse or replace plywood quickly, easily.

FREE UNIVERSAL Service!

Use Universal's *complete* engineering and field service to save your time . . . labor . . . material. We supply form layouts and details for your jobs . . . provide Field Service Engineers to assist in supervision on your job — ALL AT NO COST TO YOU! Ask for information today.

Look to UNIVERSAL first

For the BEST in Concrete Forming Equipment

offer even GREATER concrete forming *economy . . . speed . . . accuracy!*

UNI-FORM Panels

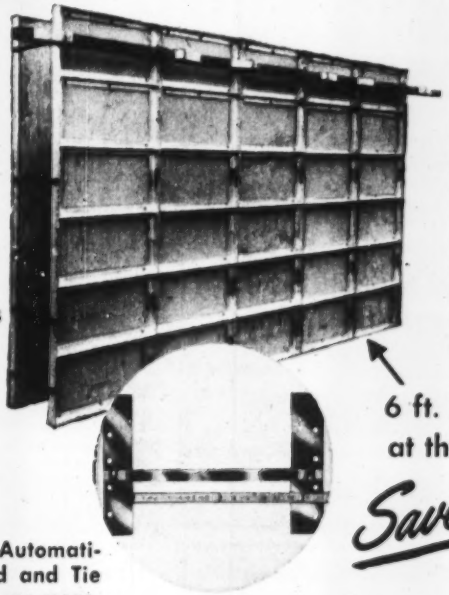
assemble into a tight, rigid, automatically accurate form in 3 SIMPLE OPERATIONS

1. Place the Uni-Form Tie Loop into the Tie Hole. Have the Tie Key ready for insertion.

2. Set Tie Key into Tie Loop. UNI-FORM Panel and Uni-Form Tie are now locked into one integral unit.

3. Set next UNI-FORM Panel in position . . . insert Tie Key in the other tie loop. Assembly is complete.

Absolutely NO alignment required on this side of form!



6 ft. high form requires only one liner at the top *on this side only*

UNI-FORM Ties Automatically Lock, Spread and Tie UNI-FORM Panels—no measuring . . . no guesswork.

Save **TIME . . . LABOR . . . MATERIAL . . .**

Get your copy of the UNI-FORM Panel Catalog Today. Sent FREE, with no obligation.

UNIVERSAL FORM CLAMP CO.

GENERAL OFFICES AND FACTORY: 1238 N. KOSTNER • CHICAGO 51, ILLINOIS

OFFICES AND WAREHOUSES:

SAN LEANDRO, CALIF., 2051-9 Williams St. • LOS ANGELES, CALIF., 9701 Isis Ave. • HOUSTON, TEXAS, 2314 Preston Ave.
CLEVELAND, OHIO, 24901 Lakeland Blvd. • BALTIMORE, MD., 661 S. Monroe St.

DISTRIBUTORS IN PRINCIPAL CITIES

Service Wherever You Build . . . Coast to Coast

Copyright 1953 by UNIVERSAL FORM CLAMP CO., Chicago 51, Ill.

(Continued from page 135)

▲ **Mich., Trenton**—Village, Fred E. Pomeraning, clk., defeated $3,000,000 bonds May 12, storm sewer. CD 4/2.

Okla., Sand Springs—City, sewage disposal plant, $250,000. Fell & Wheeler, Utica Square, Tulsa, consult. engrs.

Tenn., Somerville—City, sewage disposal plant, $105,000. Allen & Hoshall, 65 McCall Pl., Memphis, consult. engrs.

Tex., Dallas—Lone Star Land Co., R. Nasher, Walnut Hill and Hillcrest Sts., storm sewers, $60,000; sanitary sewers, $65,000, 30-acre tract to be known as Crestmanors Estates.

Tex., Garland—City, voted bonds May 12, Phase 3, sewage disposal unit, $100,000; Phase 4, sanitary sewer lines, $150,000.

Tex., Jacinto City—Town, C. L. Dacus, mayor, drainage, incl. storm sewer pipe and open ditches. $100,000.

Tex., Longview—City, cancelled bond election of May 30, sanitary sewerage sys. collection lines extens., $175,000; sewage disposal plant, $100,000; sanitary-storm sewer sys. rehabilitation, $70,000. CD 5/7.

BRIDGES

Ia., Hancock—Chicago, Rock Island & Pacific R. R. Co., W. B. Thorckmorton, ch. engr., LaSalle St. Station Chicago, 5, Ill. and Pottawattamie Co., Court House Council Bluffs, underpass. $370,000.

N. J., Trenton—Mercer Co. Dpt. Bridges & Culverts, Court House, voted bonds reconstructing Enterprise Ave. Bridge over Assunpink Creek, Hamilton Twp. $127,000. Edward L. Mount, Court House, co. engr.

PENNSYLVANIA—State Hy. Dpt., Harrisburg,

Bucks Co.—four lane bridge for U.S. Rte 13 over Penna. R.R. main line tracks between Tullytown and Morrisville, Falls Twp. $837,000.

TENNESSEE—State Hy. Dpt., Nashville,

Knox Co.—Southern Ry.-Oak Avenue overpass. $750,000. Angus R. Jessup, Presbyterian Bldg., Nashville, consult. engr.

Tex., Henderson-Rusk Co., c/o Comrs. Court, Court House, voted bonds May 16, bridge constr. $200,000. CD 4/22.

▲ **Tex., Houston**—Harris Co., Comrs. Court, Court House, bond election June 27, bridges, Precinct Nos. 1, 2, 3, and 4, $500,000 each. H. R. Jensen, co. engr.

STREETS AND ROADS

▲ **Ga., Cumming**—Comrs. Forsyth Co., Cumming, relocate 70 mi. roads now in Buford Dam Reservoir Area, Approx. $2,000,000. Vinson & Co., 30 14 St. N.E., Atlanta, consult. engrs.

Ga., Dawsonville—Comrs., Dawson Co., Dawsonville, relocated 30 mi. roads now in Buford Dam Reservoir Area, $750,000. Vinson & Co., 30 14 St. N.E., Atlanta, consult. engrs.

Ga., Savannah—City, City Hall, street imprvs. $800,000. Thomas & Hutton, 20 E. Bay St., consult. engrs. CD 3/13.

Neb., Chappell—City, paving, curbing and guttering. $100,000.

N. J., Trenton—Mercer Co. Dpt. Roads, Court House, voted bonds, exten. Whitehead Rd. from Delaware and Raritan Canal to Brunswick Pike, Lawrence Twp., $88,200; reconstr. Princeton-Highstown Rd. from Clarksville-Grovers Mill Rd. to Van Hise's Corner, West Windsor Twp., $70,035; rebuilding 1 mi. Nottingham Way from Mercerville to Hamilton Square, Hamilton Twp., $87,150. Edward L. Mount, Court House, co. engr. CD 12/21/44.

O., Cleveland—Cuyahoga Co., Court House, resurf. Detroit Ave. from W. 117 St. to Rocky River Bridge, Lakewood. $250,000. Albert S. Porter, Standard Bldg., engr. CD 11/13/51.

Tex., Garland—City, voted bonds May 12, Phase 7, street imprvs., paving, $200,000.

▲ **Tex., Henderson**—Rusk Co., c/o Comrs. Court, Court House, voted bonds May 15, road imprvs., Precincts 1, 2, 3, and 4. $400,000 each. CD 4/22.

▲ **Tex., Houston**—Harris Co., c/o Comrs. Court, Court House, bond election June 27, road constr., imprvs. hard type paving, Precinct Nos. 1, 2, 3, and 4 $2,000,000 each; constr. and paving of access road to San Jacinto Reservoir Park System, $1,500,000. H. R. Jensen, co. engr. CD 3/16/51.

Tex., Longview—City, cancelled bond election May 30, street imprvs., paving, $200,000. CD 5/7.

Va., Waynesboro—City, bond election June 16, street imprvs. $350,000.

EARTHWORK, WATERWAYS

Calif., Redondo Beach—City, City Hall, seawall. $100,000. R. L. Patterson, 2823 Newport Blvd., Newport Blvd., Newport Beach, consult. engrs. CD 1/17/46.

▲ **Tex., Houston**—Harris Co., Court House, bond election June 27, flood control. $11,000,000. H. R. Jensen, co. engr.

Tex., Tyler—City, earthen and concrete type water retention dam, across Mud Creek, $350,000. J. P. Ferrill, c/o owner, engr.

▲ **Alaska, Petersburg**—Town, Town Hall, voted bonds, Hydro-electric dam, powerhouse, 1 mi. pipe line and 12 mi. transmission line. $1,000,000. F. J. Toner, Juneau, consult. engr. CD 2/28/50, under Unclassified.

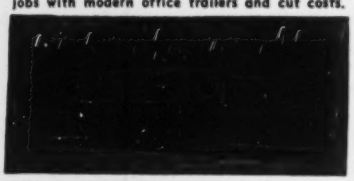
(Continued on page 141)

Mountains, you'd better "run for the hills"! I've got my *Atlantic Pneumatic Rock Breaker.*

Send for Booklet 1, and let us explain the many advantages offered by the tested, proven Atlantic Pneumatic Rock Breaker.

ATLANTIC STEEL CORP.
Since 1918 . . . Always First with the Finest!
1775 Broadway, New York 19

Would you use 1925 construction equipment today? No. Why not change over and equip your jobs with modern office trailers and cut costs.



CONTRACTORS' OFFICE TRAILER
Models 24'—28'—35' Price $2100. to $3500.
Birch finish, drafting table, 2 built-in desks with letter files & drawers, other conveniences. Can offer three year finance plan. Write for pictures and plans.

TRAILER VILLAGE SALES, INC.
8642 Pulaski Highway, Baltimore 21, Md.
Phone: Essex 2233

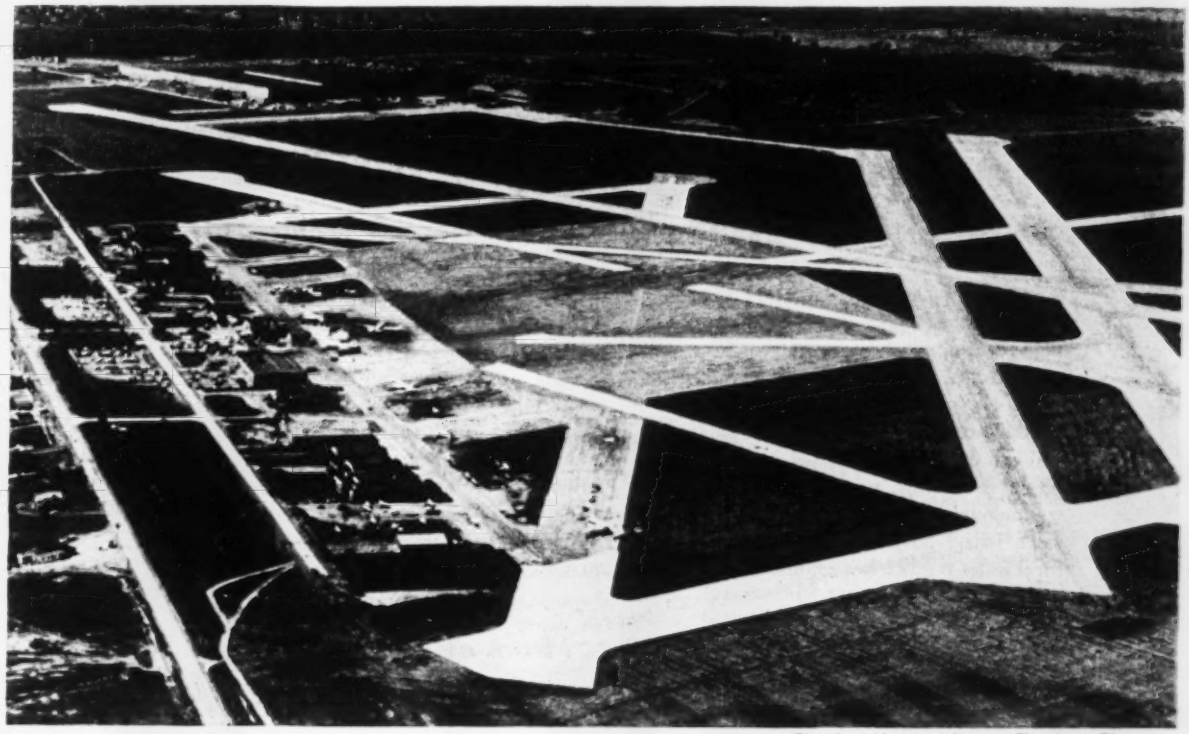
High Grade Hardwood SURVEYOR STAKES
Stained Yellow Bound with Steel Strapping

	Per 100	In 1000 Lots Per 100
2x2—12"	$ 7.85	$ 7.15
—15"	9.85	8.95
—18"	11.50	10.50
—24"	15.00	13.50
—30"	22.00	20.50
1x2—12"	6.15	5.60
—15"	6.60	6.00
—18"	7.50	6.50
—24"	9.00	8.00
—30"	12.00	11.00

Prices net F.O.B. Cumberland, Md.

BUCHANAN LUMBER CO.
CUMBERLAND, MD.

Runways stay level and smooth *at Cleveland Municipal Airport*



Cleveland Municipal Airport, Cleveland, Ohio

FLEXCELL* JOINT FILLER KEEPS EXPANSION JOINTS TIGHT, SMOOTH, MAINTENANCE-FREE

On airport runways, highways and streets, bridges—wherever concrete meets concrete—Flexcell Bituminous Fibre Expansion Joint Filler assures neat, trouble-free joints that stay closed—practically never need maintenance!

The secret is in Flexcell Joint Filler's resilient cane fibre base. It's filled with millions of tiny air cells. These permit Flexcell to absorb pressure from expanding concrete without extruding, and spring back to keep the joint closed when the concrete contracts. Result—no bumps, bulges or gaping crevices—maintenance is virtually eliminated!

Low In Cost

Flexcell Joint Filler is easy to handle, easy to work with. Provides neat, finished joints without trimming. It is impregnated with asphalt to resist moisture—and protected by the patented Ferox® process against dry rot and termites. Withstands toughest service, severest weather conditions—saves on maintenance year after year. Yet with all this, it is *low in both initial and installed cost!*

Flexcell Joint Filler has long been specified by leading engineers, contractors and architects—as well as the United States Army, Navy and other Federal, State and Municipal agencies. It will pay you to discover the reasons for this preference . . . *before* you start your next job!

Mail coupon below for complete information on the advantages and economies of using Flexcell Joint Filler for pavements, runways, sidewalks, curbs, gutters, driveways, concrete floors. No cost or obligation!

Another CELOTEX *Product*

REG. U. S. PAT. OFF.

FLEXCELL

REG. U. S. PAT. OFF.

BITUMINOUS FIBRE EXPANSION JOINT FILLER

The Celotex Corporation, 120 S. LaSalle Street, Chicago 3, Illinois

*Flexcell is a Trademark identifying Bituminous Fibre Expansion Joint Filler marketed by The Celotex Corporation.

MAIL COUPON TODAY!

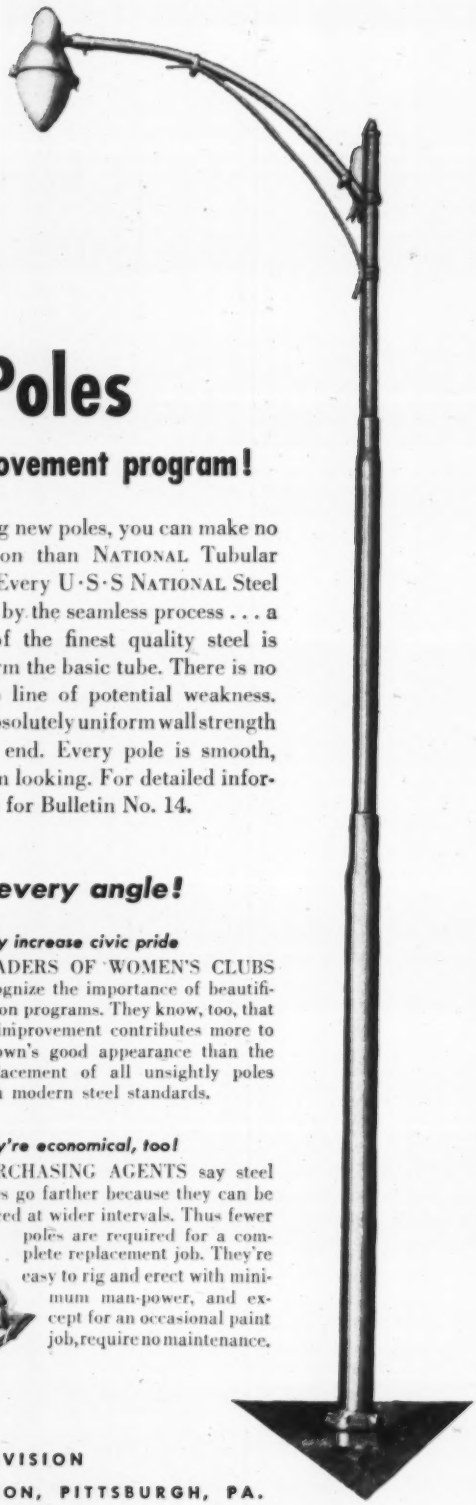
The Celotex Corporation, Dept. ENR-63
120 S. LaSalle St., Chicago 3, Ill.

Without obligation, please send me complete data and prices on Flexcell Bituminous Fibre Expansion Joint Filler.

Name_____

Address_____

City_____ Zone_____ State_____



Smooth Steel Poles

. . . a progressive step in any civic improvement program!

● Few improvements contribute more to the appearance of a community than the replacement of obsolete, irregular poles with modern, good-looking steel standards.

But an "up and coming" look is but one of the advantages you give your town through the adoption of steel standards for all street lighting, power lines, and other commercial pole purposes. Steel poles are safer. Steel poles are more economical. Steel poles require less maintenance.

In choosing new poles, you can make no better selection than NATIONAL Tubular Steel Poles. Every U·S·S NATIONAL Steel Pole is made by the seamless process . . . a solid billet of the finest quality steel is pierced to form the basic tube. There is no weld . . . no line of potential weakness. This means absolutely uniform wall strength from end to end. Every pole is smooth, clean and trim looking. For detailed information, write for Bulletin No. 14.

A GOOD INVESTMENT . . . *from every angle!*

They attract new business

CITY MANAGERS know that the first things businesses look for when considering a new location are signs of a town's progressiveness. Streets lined with smooth steel poles say yours is a live place!

They increase civic pride

LEADERS OF WOMEN'S CLUBS recognize the importance of beautification programs. They know, too, that no improvement contributes more to a town's good appearance than the replacement of all unsightly poles with modern steel standards.

They're safer than "old type"

POLICEMEN see first hand just how hazardous many old types of poles are. If they had their way, every pole would be a steel pole . . . and there would be fewer of them. NATIONAL Seamless Steel Poles can be spaced at wider intervals. And they offer less visual obstruction.

They're economical, too!

PURCHASING AGENTS say steel poles go farther because they can be spaced at wider intervals. Thus fewer poles are required for a complete replacement job. They're easy to rig and erect with minimum man-power, and except for an occasional paint job, require no maintenance.

NATIONAL TUBE DIVISION

UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S NATIONAL *Tubular* STEEL POLES

UNITED STATES STEEL

(Continued from page 138)

AIRPORTS

† **Fla., Jacksonville**—MENS' CLUB—Dist. P. Wks. Office Box 365, Naval Base, S. C. plans by Kemp, Bunch & Jackson, 33 S. Hogan St., Zone 2, 1 story, rein.-con. enlisted men's club $150,000. CD 12/3/51.

Ind., Marion — AIRPORT IMPRVS.—Marion Airport Comn., Marion, airport imprvs. $100,000. Clyde Williams, 312 W. Colfax Ave., South Bend, consult. engr. CD 12/22/43.

LATIN AMERICA

Colombia, Medellin—Compania de Asbestos, Colombiana S.A., Bogota, plans development of asbestos deposits. 1,000,000 Pesos.

Mexico, Irolo—Sr. Rodrigo Gomez, c/o Bank of Mexico, Mexico City, plans plant for assembly of Fiat automobiles and railway freight cars. 200,000,000 Pesos.

PUBLIC BUILDINGS

Ala., Grove Hill—COURT HOUSE—Clarke Co., plans by Chas. H. McCauley, Jackson Bldg., Birmingham, court house, $400,000.

Ala., Hamilton—HEADQUARTERS and ADMINISTRATION—Alabama Military Dept., P. O. Box 1311, Montgomery, headquarters and administration bldg. $400,000.

Ark., Pine Bluff—DORMITORY—Agricultural, Mechanical & Normal College, N. Cedar St., plans by John P. Almand, 1350 Louisiana St., Little Rock, dormitory, $500,000. CD 12/3.

Calif., Bakersfield—SCHOOL—Beardsley School District, 1001 Roberts Lane, voted $547,000 bonds, school imprvs.

Calif., Fontana—SCHOOL FACILITIES—Fontana Elementary School District, Fontana, voted $884,000. Bonds, school facilities.

Calif., Needles—SCHOOLS—Needles Union High School Dist., Needles, voted $825,000 bonds Needles High School modernization, and construct Junior High School. CD 4/1.

▲ **Calif., Richmond**—OFFICE—Contra Costa Co., Court House, Martinez, voted $1,350,000 bonds county office. CD 2/25.

Calif., Rosemead—SCHOOL—Rosemead School District, 3640 N. Rio Hondo Ave., plans by Marsh, Smith & Powell, 208 W. 8 St., Los Angeles, 1 story frame, stucco Muscatel School, $500,000. CD 5/4.

Calif., San Diego—SCHOOL—San Diego Unified School District, Park and El Cajon Blvds., plans by Earl F. Giberson, 2525 First Ave., 1 story, 25,000 sq. ft. elementary school, Linda Vista, $500,000. CD 11/16/50.

▲ **Calif., South Pasadena**—SCHOOLS—South Pasadena School District, 1327 Diamond St., $2,250,000 bond election June 9, imprv. Lincoln, Marengo, Los Flores and Oneonta Schools. CD 6/12/51.

Colo., Denver—SCHOOL—Cherry Creek, School District No. 5, 2400 E. Quincy St., Cherry Hills, plans by Edwin A. Francis, consult. engr. and archt., 218 E. Speer Blvd., 2 story, brick high school. $800,000.

▲ **Conn., Greenwich**—SCHOOL—Town, Bd. Educ., Havemeyer Bldg., plans by J. Gordon Carr, 80 W. 40 St., New York, N. Y., Riverside Junior High School, $1,250,000.

Fla., Tampa—SCHOOL—Hillsborough County Bd. P. Instruction, Court House, plans by Elliot C. Fletcher, 404 Marion St., Forest Park High School. $500,000.

Ga., Gainesville—SCHOOL IMPRVS.—Hall Co. Bd. Educ., Gainesville, voted bonds, school imprvs. $975,000. CD 4/1.

▲ **Ga., Milledgeville** — HOSPITAL — City and Baldwin County, Milledgeville, hospital. $1,250,000.

▲ **Ill., Chicago**—HOUSING—Chicago Housing Auth., 608 S. Dearborn St., plans by A. Epstein & Sons Co., 2011 Pershing Rd., Zone 9 Phase II, of Cabrini Extension, Inc. 650 unit apartment bldgs. $6,000,000; Phase III Cabrini Extension 621-unit apartment bldgs. $6,500,000. CD 5/15/52.

▲ **Mich., Ann Arbor**—SCHOOL—City, Bd. Educ., plans by Fulton, Krinsky & DeLa Motte, 6014 Euclid Ave., Cleveland, O., 2 story, brick, steel, concrete Senior High School. $5,500,000. CD 3/3.

Mich., Watervliet—SCHOOL—Bd. Educ. School Dist., $400,000 bond election June 8, two elementary schools. CD 9/19.

Mo., Mehlville (St. Louis 23 P. O.)—SCHOOL—School Dist. R-9, St. Louis Co. Bd. Educ., Emil H. C. Bernard, supt. Schools, 623 W. Ripa Ave., Lemay, Zone 23, voted $840,000 bonds May 13, elementary school, Forder Rd. south of here. Wm B. Ittner, Inc., 408 Bd. Educ. Bldg., 911 Locust St., St. Louis, Zone 1, engr.-archt. CD 3/6.

▲ **Neb., Ogallala**—POWER PLANT—Consumers Public Power Dist., 1452 25th Ave., Columbus, power plant, $1,700,000. R. L. Schacht, c/o owner, ch. engr.

N. H., Peterborough — HIGH SCHOOL — Peterborough School Comn., Peterborough, plans by James A. Britton, 315 Federal St., Greenfield, Mass., Regional Junior and Senior High School. $500,000. CD 3/18.

N. Y., Comstock—BUILDING ALTERATIONS, etc.—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, construction, alterations, addns. to bldgs. at Great Meadow Prison for Dpt. Correction. $500,000.

N. Y., Lloyd Harbor Village (P. O. Huntington)—SCHOOL—Bd. Educ., Lloyd Harbor Village, school addn., School Lane. $650,000.

THE BEST CURING METHOD IS
BETTER THAN EVER
—at no increase in cost!

Maintains more uniform concrete temperature—day and night

State authorities recently issued this statement—"Waterproof paper is the best, most practical method of retaining moisture in fresh concrete."

And now Sisalkraft—recognized for years as the toughest waterproof paper blanket—has been white-surfaced to reflect solar heat and maintain a more uniform temperature in the concrete slab. And remember, Sisalkraft Blankets are so rugged that they outlast 15 uses.

(Based on average job conditions—72 hour curing period)

WRITE FOR FREE 26 PAGE BOOK on the Sisalkraft method of Highway Curing and Protection. Dept. ENR-6

MEMBER OF AMERICAN ROADBUILDERS ASSN.

SISALKRAFT WATERPROOF REENFORCED PROTECTIVE PAPERS

The SISALKRAFT Co.

Chicago 6, Illinois • New York 17, N.Y. • San Francisco 5, Cal.

DREDGES

HYDRAULIC
● DIPPER ●
CLAMSHELL

Bolted sectional steel hulls for landlocked, inland waters

If you need a dredge, write us!

AMERICAN STEEL DREDGE CO. INC.
FORT WAYNE 1 · INDIANA · U.S.A.

DESIGNERS AND BUILDERS OF DREDGING EQUIPMENT SINCE 1905

TEST BORINGS
for
• COAL
• MINERALS
• DAMS & BRIDGES
• BUILDINGS

"We look into the earth"

PENNSYLVANIA Drilling CO.

DRILLING CONTRACTORS AND MFRS.
PITTSBURGH 20, PA.

IT'S Sauerman... for the latest word*... on EARTHMOVING EQUIPMENT!

*SEND FOR THESE FREE ILLUSTRATED CATALOGS DESCRIBING AND LISTING SPECIFIC DATA ON MANY TYPES OF OPERATIONS.

POWER DRAG SCRAPERS . . . describes one-man excavation and conveying of rock, clay, sand and gravel, ore and other bulk materials. Ask for Catalog A.

SLACKLINE CABLEWAY EXCAVATORS . . . describes one-man control of operations that require deep digging, especially under water and conveying to a high delivery point. Ask for Catalog C.

BULK STORAGE BY POWER SCRAPER . . . tells how to stockpile and reclaim bulk materials with power scrapers—both indoors and out. Ask for Catalog E.

CRESCENT SCRAPER BUCKETS . . . lists standard sizes 1/3 to 15 cu. yds. — their use with boom machines—buckets for drag scrapers. Ask for Catalog J.

Write today . . . specify any or all of the above catalogs.

SAUERMAN BROS., INC.

532 S. CLINTON ST., CHICAGO 7, ILL.

You can make sales

in the new-construction market

when you find prospects

who need your product or service.

Dodge Reports find prospects

every day—for most leading construction firms and salesmen...They can for you. Get how-to-use Book free. Write Dept. E-535.

DODGE REPORTS

119 W. 40th St., New York 18, N. Y.

Timely, accurate construction news service East of the Rockies

THE FIRST STEP IN EVERY SALE

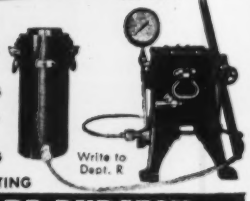
F.W. DODGE CORPORATION

DUDGEON HYDRAULIC JACKS

SALES RENTALS

• CAPACITY TO 600 TONS

FOR:
PILE TESTING
•
UNDER-PINNING
•
BRIDGES
•
PIPE PUSHING
•
SOIL TESTING



Write to Dept. R

RICHARD DUDGEON INC.

789 BERGEN ST. • ST 8-4040 • BROOKLYN, N. Y.

from

OFFICE MANAGER

to

GENERAL MANAGER

yes, that is the quality of the personnel available to your organization through the Classified Advertising pages of ENGINEERING NEWS-RECORD.

Classified Advertising Division

ENGINEERING NEWS-RECORD

330 W. 42nd St. New York 36, N. Y.

N. Y., Port Chester—SCHOOLS—City Bd. Educ., Port Chester, plans by Sherwood Mills & Smith, 65 Broad St., Stamford, Conn., 2 elementary schools, King and Olive Sts. $650,000.

▲ N. C., Greensboro—DORMITORY, etc.—Agricultural & Technical College, 312 N. Dudley St., plans by McMinn & Norfleet, 233½ N. Greene St., mens dormitory, $500,000; classroom bldg., $700,000; agriculture bldg., $800,000. CD 1/4/50.

O., Grove City—SCHOOL—Franklin Twp. School Dist., Grove City, voted bonds May 12, schools. $970,000. CD 4/30.

Ore., Lakeview—COURT HOUSE—Lake Co., Court House, Lakeview, plans by Morrison & Howard, Klamath Falls, concrete court house, $400,000.

Pa., Penndel—SCHOOL—Middletown Twp. Bd. Educ., Penndel, elementary school. $500,000.

Pa., Philipsburg—HOSPITAL—General State Auth., 18 and Herr Sts., Harrisburg, 4 story annex to main bldg. of Philipsburg State Hospital. $500,000. A. F. Jones, c/o owner, ch. engr. Project for 3 story main bldg. cancelled. CD 12/22.

▲ R. I., Newport—HIGH SCHOOL—City, School Dpt., Wm. MacLeod, chn. Comm., Newport, high school. $2,000,000. Charles A. Maguire & Assoc., 1015 Turks Head Bldg., Providence, engr. survey. CD 3/29/49.

S. C., Gaffney—HIGH SCHOOLS—Cherokee Co. Bd. Educ., Gaffney, White High School, $450,000; Negro High School, $450,000.

Tenn., Lebanon—SCHOOL—Wilson Co. Bd. Educ., Lebanon, bond election June 27, school imprvs. $903,000. CD 4/20.

Tenn., Manchester—HIGH SCHOOL—Coffee Co. Bd. Educ., Manchester, high school addn. $825,000.

Tex., Garland—POWER PLANT, etc.—City, voted bonds May 12, Phase 1, electric power plant expansion. $438,000.

▲ Tex., Houston—CRIMINAL COURTS, etc.—Harris Co., Court House, bond election June 27, remodel criminal courts bldg. to provide space for addnl. courts in civil courts bldg. $1,500,000. CD 5/1.

Tex., Pecos—HOSPITAL—Reeves Co., Pecos, voted bonds Apr. 4, county hospital, $400,000. Buford & Feinberg, 326 Interurban Bldg., Dallas, archts.

Tex., San Angelo—SCHOOLS—San Angelo Independent School Dist., San Angelo, reconstr. Lakeview High and Elementary School, due to cyclone disaster. $450,000. CD 12/6/50.

▲ Tex., Tyler—COURT HOUSE—Smith Co., Court House, plans by Thomas, Jameson & Merrill, 820 N. Harwood St., Dallas, and E. Davis Wilcox, 104 Prof. Bldg., court house, $1,500,000. CD 5/13.

▲ Va., Fincastle—SCHOOL—Botetourt Co. School Bd., Fincastle, consolidated high and elementary school. $1,000,000. H. M. Painter, c/o owner, supt. schools.

Wash., Spokane—COURT HOUSE—Spokane Co., Court House, plans by Whitehouse & Price, Hutton Bldg., 4 story, 6,500 sq. ft. court house addn. $435,000.

Va., Williamsburg—SCHOOL—James City Co. Bd. Educ., Williamsburg, bond election June 23, school imprvs. $600,000. CD 11/25.

▲ Alaska, Anchorage—GYMNASIUM—School Bd., Anchorage, voted bonds, high school gymnasium in Spenard area. $2,500,000. CD 4/13.

▲ Ont., Toronto—FOOD BUILDING—City, City Hall, plans by Richard A. Fisher, 1071 Yonge St., pure food bldg. at city-owned Canadian National Exhibition. $1,500,000.

COMMERCIAL BUILDINGS

▲ Calif., Moraga—HOUSING and SHOPPING CENTER—Donald L. Rheem Property, 1521 Franklin St., Oakland, home development and shopping center, northwest of St. Mary's College, north of here. $10,000,000.

▲ D. C., Wash.—LAW CENTER—George Washington University 2029 "G" St. N.W., plans by Faulkner, Kingsbury & Stenhouse, Ring Bldg., 8 story law center, $3,500,000.

D. C., Wash.—OFFICE—Goodwill Industry, 1218 New Hampshire Ave. N.W., plans by Berla & Abel, 1636 Connecticut Ave. N.W., office addn. $500,000.

▲ Fla., Miami—SHOPPING CENTER—Elaine, Inc., c/o Gamble, Pownall & Gilroy, archts., Fort Lauderdale, shopping center. $10,000,000.

▲ Ga., Albany—HOSPITAL—Phoebe Putney Memorial Hospital, Albany, hospital addn. $1,000,000.

Ga., Atlanta—CHURCH—Druid Hills Baptist Church, Ponce De Leon Ave., church, $700,000.

▲ Ill., Hinsdale—BANK and SHOPPING CENTER—Hinsdale Federal Savings & Loan Assoc., Hinsdale, plans by Mittelbuscher & Tourtelot, 39 S. La Salle St., Chicago, Zone 3, bank and shopping center. $1,000,000.

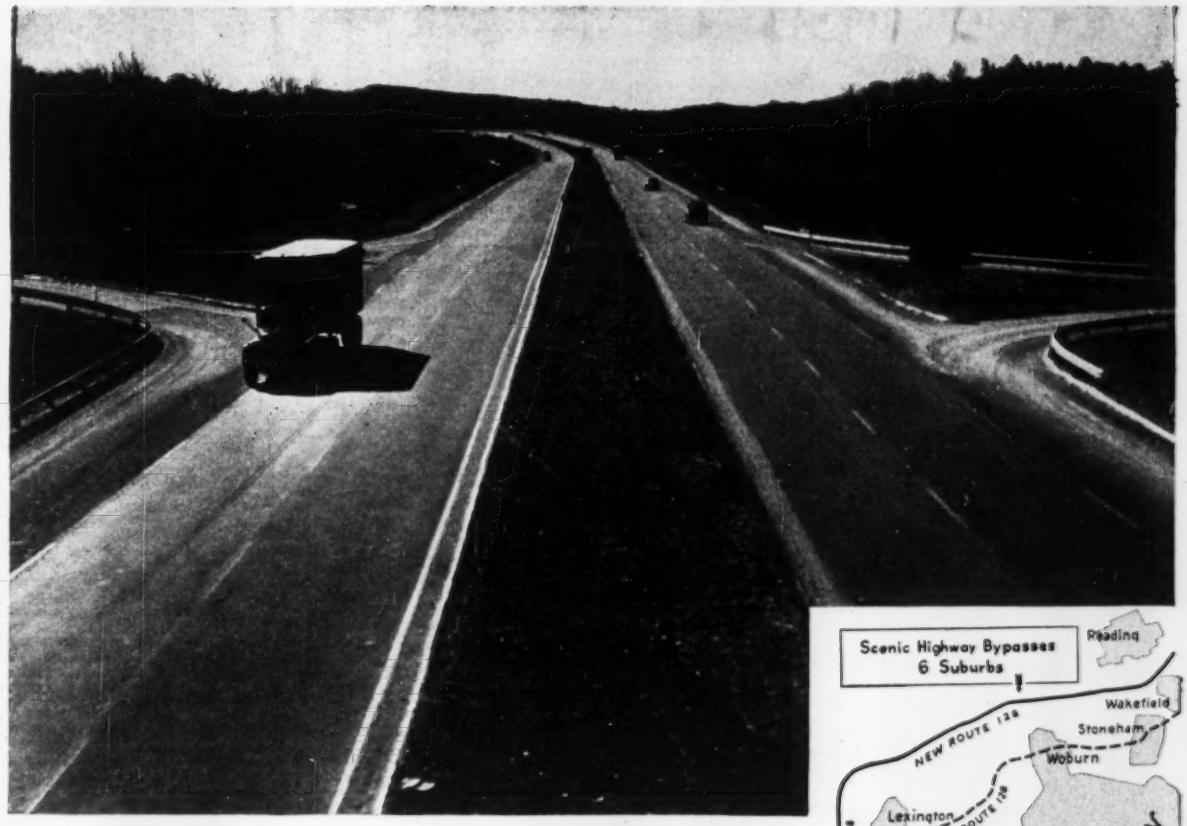
La., Lake Charles—CHURCH—First Baptist Church, Lake Charles, plans by Gabriel & Reames, Roumain Bldg., church. $500,000.

▲ Me., Bangor—HOUSING—S. & A. Allen Constr. Co., 9 Newbury St., Boston, Mass., 250 housing units. $1,250,000.

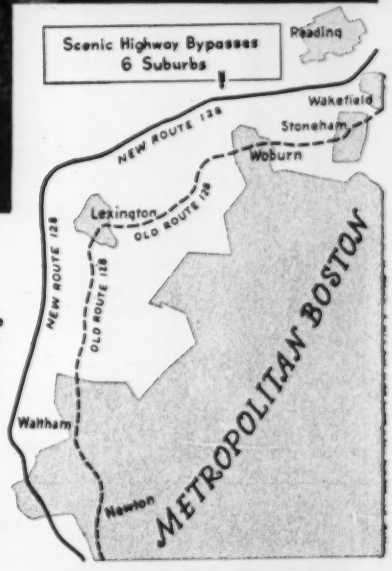
▲ Mich., Allen Park—HOSPITAL—People's Community Hospital Auth., Kenneth Gremore, exec. secy., Ypsilanti, plans by Butler Eng. Co. of Michigan, 616 Palister St., Detroit, brick, steel, concrete hospital. $1,500,000.

▲ Mich., Wayne—HOSPITAL—People's Community Hospital Auth., Kenneth Greymore, exec. secy., Ypsilanti, plans by Butler Eng., Co. of Michigan, 616 Palister St., Detroit, brick, steel hospital. $1,500,000.

(Continued on page 144)



New bypass helps motorists rim the hub in about 30 minutes. The new 4-lane highway also connects Worcester Turnpike with Newburyport Pike.



Here's a good example of the work state highway departments and roadbuilders are doing to relieve congested highways throughout the country. The new Northern Circumferential Highway eliminates congestion, saves tempers and time.

New Bypass Unsnarls Traffic in Boston Area

Not long ago, motorists using Route 128 outside of Boston had to tackle traffic in six suburbs. This meant a slow, tortuous 70-minute trek through city streets filled with cars and trucks.

Today, a new 4-lane highway helps motorists rim the hub in about 30 minutes. For this reason, approximately a million cars a month now use the new, 22-mile Northern Circumferential Highway.

This new highway was completed by seven contractors at a cost of $18,000,000. Bethlehem furnished structural steel, reinforcing steel and guard rails.

Old Route 128 ran through six Boston suburbs. New route relieves former congestion like this shown here on outskirts of Boston.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

STEEL FOR HIGHWAYS

BETHLEHEM STEEL

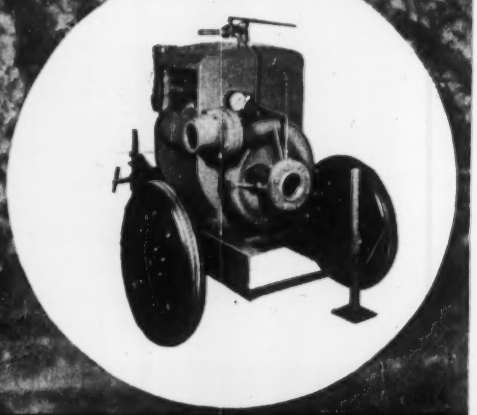
Dowel Units • Reinforcing Bars • Guard Rail
Hollow Drill Steel • Spikes • Bolts and Nuts • Tie-Rods
Timber Bridge Hardware • Sheet- and H-Piling

for **Sprinkler Irrigation**

MORE PEOPLE BUY MARLOWS

than any other

Engine-Driven PUMP



MARLOW PUMPS

Other factories in France and England

RIDGEWOOD, NEW JERSEY

Branch Plants DeQueen, Arkansas
West Chicago, Illinois

Distributors and Dealers everywhere

(Continued from page 142)

▲ **Nev., Las Vegas**—HOTEL—Sahara Hotel, c/o Martin J. Stern, archt., 450 N. Beverly Dr., Beverly Hills, Calif., 2 story, cement block hotel addn. $1,000,000.

▲ **N. J., Manahawkin**—HOUSES—Island Estates Corp., B. M. Robinson, pres., 100 E. 42 St., New York 17, N. Y. 450 houses on 250-acre tract on Long Beach Island opposite here to be called Loveladies Harbor Estates, $10,000,000.

▲ **N. J., Morristown**—HOME OFFICE—Beneficial Management Co., 15 Washington St., Newark, Home Office, South and Franklin Sts. $1,000,000.

▲ **N. Y., New York**—APARTMENT—Brevoort, Inc., 521 Fifth Ave., Zone 17, plans by Boak & Raad, 175 Fifth Ave., Zone 10, apartment, 9-21 Fifth Ave. $1,815,000.

N. Y., New York—COLLEGE BLDG.—College of Mt. St Vincent, 263 St. and Riverdale Ave., Zone 71, plans by William J. Boegel, 12 E. 48 St., Zone 17, 3 story college bldg., 26 St. and Riverdale Ave. $500,000.

N. Y., New York—APARTMENT—First Terrace Gardens, Inc., 415-55 W. 23 St., Zone 11, plans by Philip Birnbaum, 12 E. 48 St., Zone 17, apartment alterations, at site. $425,000.

▲ **N. Y., New York**—APARTMENT—Rainbow Constr. Corp., 1083 E. 18 St., Brooklyn, Zone 30, plans by S. J. Kessler & Sons, 118 E. 28 St., Zone 16, 12 story apartment, Johnson Ave. and 231 St. $1,000,000.

▲ **N. Y., Whitestone**—APARTMENT—Cryder Holding Corp., c/o Kelly & Gruzen, archts., 80 Fifth Ave., New York, Zone 3, three 6 story apartments, Powell's Cove Blvd., east of 161 St. $1,800,000.

▲ **N. Y., Yonkers**—APARTMENT—Hudson Terrace Apartments, c/o Eli Rabineau, archt., 200 E. 37 St., New York, Zone 1, and A. W. Geller, archt., 130 E. 56 St., New York, Zone 22, co-operative apartment for 342 families, Riverdale Ave. $3,800,000. Peter W. Bruder, 200 E. 37 St., New York, Zone 1, consult. engr.

▲ **Pa., Bethlehem**—SHOPPING CENTER—James T. DeBartolo, 4103 Hudson Dr., Youngstown, O., shopping center, 47-acre Lehigh Golf Course for 82 stores and parking. $5,000,000. CD 9/8.

▲ **Pa., Phila.**—COMMUNITY TRANSIT CENTER—Walter H. Annenberg, c/o Philadelphia Inquirer, Inquirer Bldg., community transit center, incl. bus terminal, parking facilities and airline terminal at "Penn Center" Development, 17-18 Sts., Market St. to Penn Blvd. CD 2/4 under Pennsylvania R. R., as owner.

S. C., Columbia—SHOPPING CENTER—Guignard Estates, Inc., c/o Wm G. Lyles, Carlisle, Bissett & Wolff, archts., 1321 Bull St., shopping center, $900,000.

Tex., Houston—DWELLINGS—K. B. Constr. Co., 614 Kipling St., 18 ranch type dwellings, $325,000; 24 one story masonry dwellings, $378,000, in Brae Burn Club Estates Sect.

▲ **Tex., Humble**—DWELLINGS—Joe B. Potter Realty Co., 4500 D Montrose St., Houston, Unit 1, 40 frame dwellings, $350,000; Unit 2, 50 masonry dwellings, $490,000; Unit 3, 45 masonry, frame dwellings, $440,000; Unit 4, 65 one-story masonry dwellings, $650,000; Unit 5, 32 frame, masonry dwellings, $325,000, in Lakeland Addition. E. H. Kirkland Eng. Co., Hermann Bldg., Houston, consult. engr.

Tex., Waco—HIGH SCHOOL—St. Mary's Catholic Church, 1401 Washington Ave., plans by Walter Cocke, Jr. & Co. 1507 Franklin St., parochial Junior and Senior High School. $500,000. CD 9/4/46.

▲ **Utah, Salt Lake City**—SHOPPING CENTER—Magna Inv. & Development Co., and A. R. Curtis & Sons, Newhouse Bldg., shopping center in Sugar Business District $3,000,000.

Alta., Edmonton—HOTEL—Max Wintrobe, c/o city clerk, Edmonton, hotel, $515,000.

▲ **N. S., Dartmouth**—APARTMENT BLOCKS—Dartmouth Park Apartments Ltd., Dartmouth, 8 apartment blocks incl. 216 units. $1,500,000.

▲ **Ont., Oakville**—SHOPPING CENTER—Morganstern Famous Tile Co., 749 51 Bathurst St., Toronto, plans by E. I. Richmond, 455 Spadina Ave., Toronto, 20-store shopping center, Main St. E. $1,000,000.

▲ **Ont., Toronto**—HOTEL—Milner Hotels, Inc., Book Tower Bldg., Detroit, Mich., plans by Kaplan & Sprachman, 46 Yorkville Ave., 12 story, 650-room stone, brick hotel, Queen St. W. and University Ave. $10,000,000.

INDUSTRIAL BUILDINGS

Ala., Alexander City—FOUNDRY—Russell Pipe & Foundry Co., Alexander City, rebuilding foundry, $300,000.

Calif., Van Nuys—MANUFACTURING—Pacific Mercury Television Mfg. Co., 5955 Van Nuys Blvd., plans by Ulrich Plant, 731 N. La Brea Ave., Los Angeles, 120,000 sq. ft. reinforced brick manufacturing bldg. $500,000.

Fla., Fort Lauderdale — WAREHOUSE-OFFICE — Cross Plumbing Co., 2505 S. W2 Ave., plan by Robert E. Hansen, 311 S. E. 16 Ave., warehouse-office. $100,000.

Fla., Miami—PLANT—Cupromatic, Inc., 912 S.W. 69 Ave., plant, $125,000. E. S. Frederick, 3107 N.W. 17 Ave., consult. engr.

Ind., Columbus—FACTORY—Cummins Engine Co., Columbus, factory addn. $100,000. CD 6/14/51.

▲ **Ky., Calvert City**—PLANT—Goodrich Chemical Div. B. F. Goodrich Co., Rose Bldg., Cleveland, O., acrylonitrile plant. $8,500,000.

La., Pilottown—RADIO STATION—Texas Pipe Line Co., Texas Co. Bldg., Houston, Tex., base radio station. $175,000.

Mississippi—RURAL DISTRIBUTION LINES—Southern Pine Eelctric Power Assoc., Taylorsville, 100 mi. rural distr. lines, sys. imprvs., Smith Co. $735,000.

N. Y., Attica—WALL—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, reconstr. north wall at Attica Prison for Dpt. Correction, $275,000.

N. Y., Brooklyn—SHOP—Arthur Tickle Engr. Works, Inc., 21 Delevan St., Zone 31, 1 story pipe and plate machine shop, 18-20 Delevan St. $100,000. Byron H. Wilson, c/o owner, consult. engr.

N. Y., Long Island City—WAREHOUSE—N. & H. Constr. Corp., 31-16 20 Ave., Astoria, plans by S. Wexler, c/o owner, 1 story, 26x100 ft. warehouse, 33 St., north of Hunterspoint Ave. $140,000.

N. C., Raleigh—SERVICE and SHOP—Carolina Power & Light Co. Insurance Bldg., service and shop. $200,000.

▲ **O., Cleveland**—BREWERY—Brewing Corp. of America, 9400 Quincy Ave., 4 story, 110,000 sq. ft. concrete addn. providing brewery fermentation and ageing facilities. $3,000,000. Henry R. Trees, c/o owner, engr.

O., Columbus—WAREHOUSE—Armstrong Furnace Co., 851 W. Third Ave., 1 story, 35,000 sq. ft., concrete, steel warehouse addn. to existing factory. $100,000.

O., Wooster—PLANT—Wooster Rubber Co., Wooster, 53,000 sq. ft. plant, factory and warehouse, $500,000.

▲ **Okla., Duncan**—COKING UNIT—Sunray Oil Co., 1st. Natl. Bldg., Tulsa, 6,000 bbl. per day coking unit, $1,000,000. C. H. Wright, c/o owner, engr.

Pa., Phila.—WAREHOUSE—American Preserve Co., Lehigh Ave. and 3 St., 2 story, bsmnt., 80x139 ft., brick warehouse addn. $150,000. Earl P. Allabach Assoc., 16 S. Broad St., consult. engrs.

Pa., Phila.—FREIGHT TERMINAL—Jack Cole Co., 1900 Vanderbilt Rd., Birmingham, Ala., plans by Evan M. Terry, Brown Marx Bldg., Birmingham, Ala., motor freight terminal. $500,000.

Pa., Phila.—PLANT—Penn Packing Co., 630 Callowhill St., plant, $150,000. Morris Fruchtbaum, 328 Chestnut St., engr.

Tex., Corsicana—PLANT—Burrus Manufacturing Co., Lincolnton, N. C., furniture mfg. plant unit. $250,000.

Tex., Garland — ELECTRIC POWER — DISTRIBUTION LINES—City, voted bonds May 12, Phase 2, electric power distr. lines, $100,000.

Tex., Houston — WAREHOUSING, STORAGE — Leff Brothers Dry Goods & Notions Co., 1711 Preston Ave., plans by L. Gabert, Wm. J. Wisdom, 1315 Bell Ave., 2 story, 32,000 sq. ft. frame warehousing and storage, rein.-con. fdn. $150,000. Walter P. Moore, 2 Pinedale St., I. A. Naman, 2027 Harold St., consult. engrs.

▲ **Tex., Houston**—WHARVES—Port Comm., Warren S. Bellows, chn., Wharf 13, bond election June 27, constr. Marine Wharf to be used for unloading grain from barges and ships, $1,500,000; new wharf, $3,000,000; new pallets for loading and unloading at terminal, $500,000; const. covered warehouse, $500,000. CD 12/11.

Tex., Spring Branch—PARK, etc.—Truett Peachey Development Corp., c/o Jack Burke & Jimmy Demaret, 4017 Case St., Houston, park, playgrounds, athletic courts, $65,000; rein.-con. swimming pool, bathhouse, $60,000. Hilton & Coulson, 3821 Fannin St., Houston, consult. engrs. gas sys., above work. 1-mi. from Spring Branch High School.

Tex., West University Place—STORAGE, etc.—West University Place, 3800 University St., Houston, truck storage and repair garage. $90,000; equip. warehouse, $100,000.

Wis., Milwaukee—FACTORY, etc—Western Electric Co., Inc., 1401 W. Clybourn St., Zone 3 1 and 2 story, 300x400 ft. factory and office, $900,000 Lockwood Greene Engineers, Inc., 10 Rockefeller Plaza, New York, N. Y., engr. CD 7/13/50.

▲ **B. C., New Westminster**—FACTORY DEVELOPMENT—Duke of Westminster, c/o G. J. Hardman, chartered surv., New Westminster, factory development, on Annacis Island, near here, 1,200 acres, incl. 21,000 ft. long causeway, deep sea docks, etc. $100,000,000.

▲ **Ont., London**—PLANT—John Labatt Ltd., H. Mackenzie, genl. mgr., Simcoe St., plans by John M. Watt, 341 Richmond St., bottling plant addns. $4,000,000 M. M. Dillon Assocs., Bank of Toronto Bldg., consult. engrs. CD 12/29.

Ont., Toronto—PLANT—Plate & Structural Steel Ltd. 48 Abell St., 60,000 sq. ft. steel fabricating plant. $700,000. Proctor, Redfern & Laughlin, 11 Jordan St., engrs. CD 2/19.

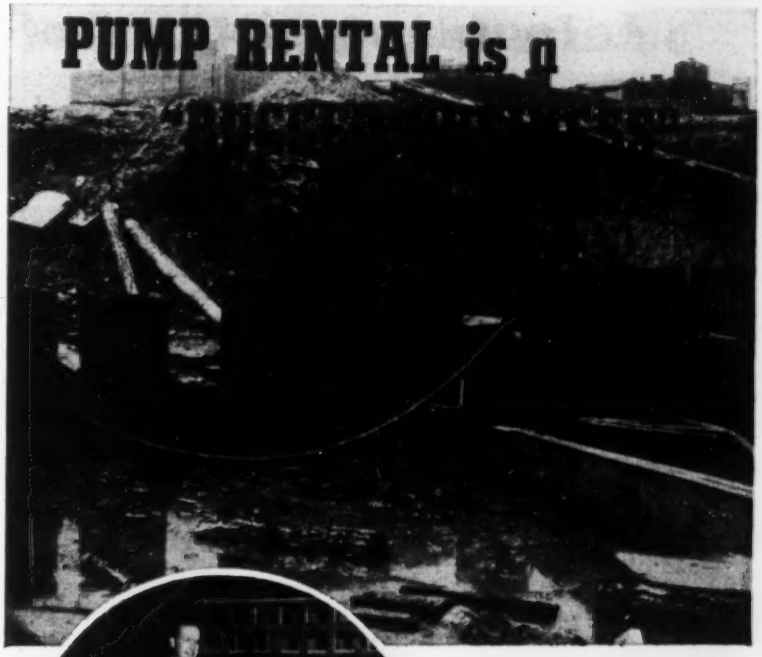
UNCLASSIFIED

▲ **Georgia and Mississippi**—COMMUNICATION SYSTEM—Southern Bell Telephone Co., Hurt Bldg., Atlanta, Ga. relay communication system between Atlanta, Ga. and Jackson, Miss. $1,000,000.

▲ **Oklahoma**—GAS LINE and COMPRESSOR UNIT—Cities Service Gas Co., 1st. Natl. Bldg., Oklahoma City, 44 mi. 20 in. and 25 mi. 16 in. natural gas line from Oklahoma City, Oklahoma County through counties of Cleveland, McClain and Garvin, $2,900,000; 1,100 hp. compressor unit, Oklahoma City area, $125,000. CD 1/8/52.

▲ **Okla., Chickasha**—GAS DISTRIBUTION SYSTEM—City, voted bonds May 12, natural gas distr. sys. $1,100,000. H. B. McDowell, c/o owner, engr. CD 5/4.

Que., Quebec City—CURLING RINK, etc.—Army, Navy & Air Force Veterans, 46 Youville St., plans by A. Gilbert, 581 St. Cyrille St., 2 story, bsmnt., 100x150 ft., curling rink and club house, Belvidere Ave. $600,000.



James King, General Manager of Birmingham Rock Bit Company says:

"We operate one of the largest pump rental fleets in Alabama, and our pumps are Marlow exclusively. We wanted pumps that would stay on the job longer without maintenance, that's why we chose Marlows. Our customers are well satisfied with Marlow Performance."

. . . *and* MARLOWS *are built to take tough on-the-job abuse!*

Sure! Marlow Pumps are built to take tough day-in-and-day-out use in the field without shutdown for maintenance or repair. That's why more and more rental fleet operators are *standardizing* on these dependable Marlow Engine-Driven Self-Priming Centrifugals, and that's why contractors, too, are *buying more Marlows than any other pump*, because Marlows have the features they demand.

Marlow builds models in all A.G.C. ratings from 4M to 200M, 1½" to 10"—plus many other models including the Famous MARLOW "Mud Hog".

For complete information on these modern self-priming centrifugal pumps, see your Marlow dealer or write for bulletin C-52.

337

- SIMPLE CONSTRUCTION
- LONGER LIFE
- LOWER MAINTENANCE
- FASTER PRIMING
- HANDLES TRASH
- HIGH EFFICIENCY
- LOW FUEL COST

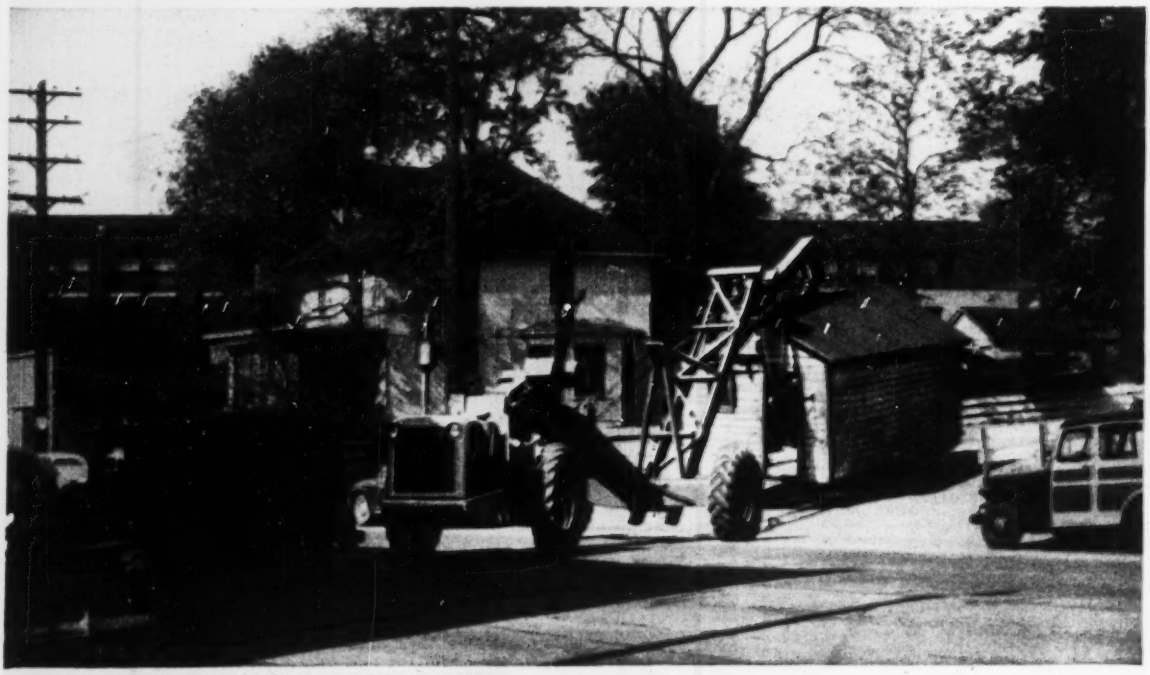
MARLOW PUMPS RIDGEWOOD, NEW JERSEY
Branch Plants: DeQueen, Arkansas; West Chicago, Illinois
Other factories in France and England. Distributors and Dealers everywhere

Advertisement

LeTourneau pictures of the month . . .

"TURNS MOST ANYWHERE" — J. R. Dunn Lumber Co, Baxley, Ga. push-loads D Tournapull with 5½ yds of sandy clay, completes a typical 2.4 mi cycle every 8⅔ min. Says Operator Willie Lee, a skinner since 1945, "I like Tournapulls better than any crawler and pan. They do better work, have more power, turn most anywhere." "D" turns around non-stop on a fill only 25'4" wide.

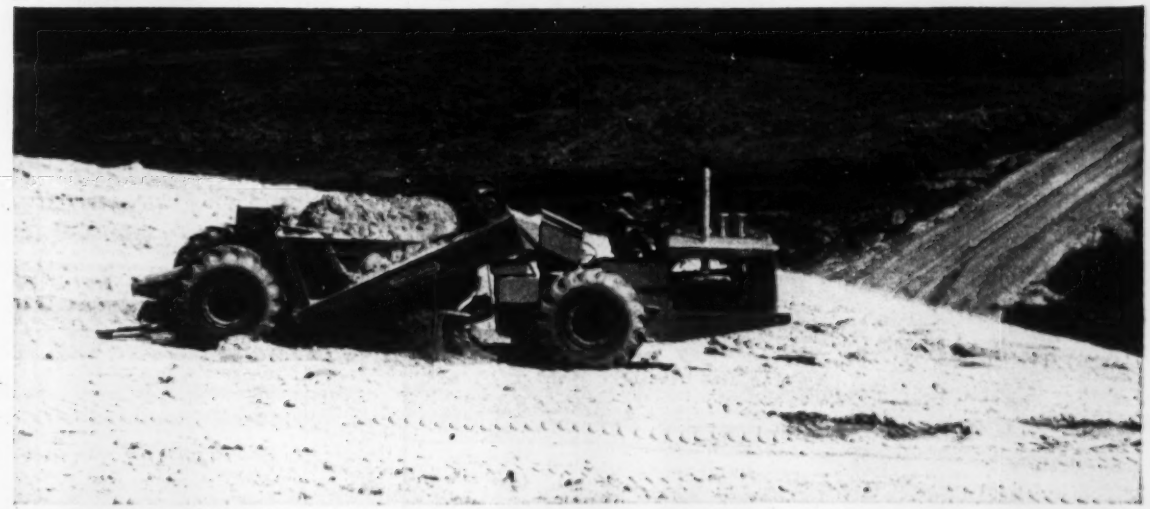
9 TONS, NO SPILL — This 9-ton rig, one of two belonging to Everett & Clark, Plattsburg, Missouri, hauls 800 yds of shot rock and dirt per 8-hr day from pit to crusher. Material is used to make concrete building blocks. Big 7 x 11-ft target and low rear-entry speed shovel-loading of D Tournarocker . . . reduce spillage.



LIFTS, CARRIES LOAD OVER HWY — By retracting boom electrically to prevent sway, this Illinois operator carries crane loads safely through city traffic with D Tournacrane. Moving this garage was a short, fast job. With rope attached to building, crane picked it up and drove away. Tournacrane needs no outriggers, has stability to carry capacity loads.

Advertisement

performance reports the world around



LICKS 35% GRADE — Loaded with 11 pay yds of sandy clay, C. H. Jurgensen's C Tournapull starts down 35% grade. With 4-wheel multi-disc air brakes, operator felt perfectly safe despite the steep slope. Time studies taken on 6200 ft cycles show he averaged 12 trips per 55-min hr. Rig is one of 8 electric-control Tournapulls used by Jurgensen on 740,000 yd leveling job at Camp Pendleton, California, the nation's largest Marine base. In 1200 hrs on job, all units were 97 to 98% efficient.

DOUBLE-HEADER — This Tournatractor means business at both ends. Here, it lifts and carries a P&H welder from one job location to another. Crane boom was designed by Standard Sand & Silica Co, owner, of Davenport, Florida. It uses regular LeTourneau electric motor and winch, has capacity of about 3 tons. Tournatractor's front end mounts standard LeTourneau dozer. It is used to doze tailing material . . . clear trees . . . strip overburden . . . maintain roads . . . switch railroad cars . . . handle many other widely-scattered push-pull assignments.

280 MI IN 14 HRS — Scholl Bros, Pewaukee, Wis, drive their 3 D Tournapulls everywhere under their own power. A typical trip, Milwaukee to Waukesha, a 40 min drive by car, took the "D's" exactly 1 hr through heavy traffic. A 17 mi trip from Sussex to Milwaukee took 45 min. A longer journey, 280 mi from Peoria (Ill.) to Pewaukee, took 14 hrs, total driving time. Tournapulls are equally fast on the job. Digging marsh sand, each unit moved 78 pay yds hourly over 2600 ft cycles.

9000 FT UP — In the Andes Mountains of Ecuador, this Tournatractor is building causeways for the famous Pan-American Highway. Rig goes up and down steep slopes where trucks dare not venture. Stanley Williamson, highway engineer for the Ecuador Government, owner of the machine, reports they will complete this 30,000 yd causeway fill in one month.

50 TONS EVERY 4½ MIN — Stripping overburden from two soft coal veins near Clearfield, Pa, big "A" Tournarocker carries 50 tons of slate, shale and clay per load. Time for 400-ft cycle averaged 4½ minutes.

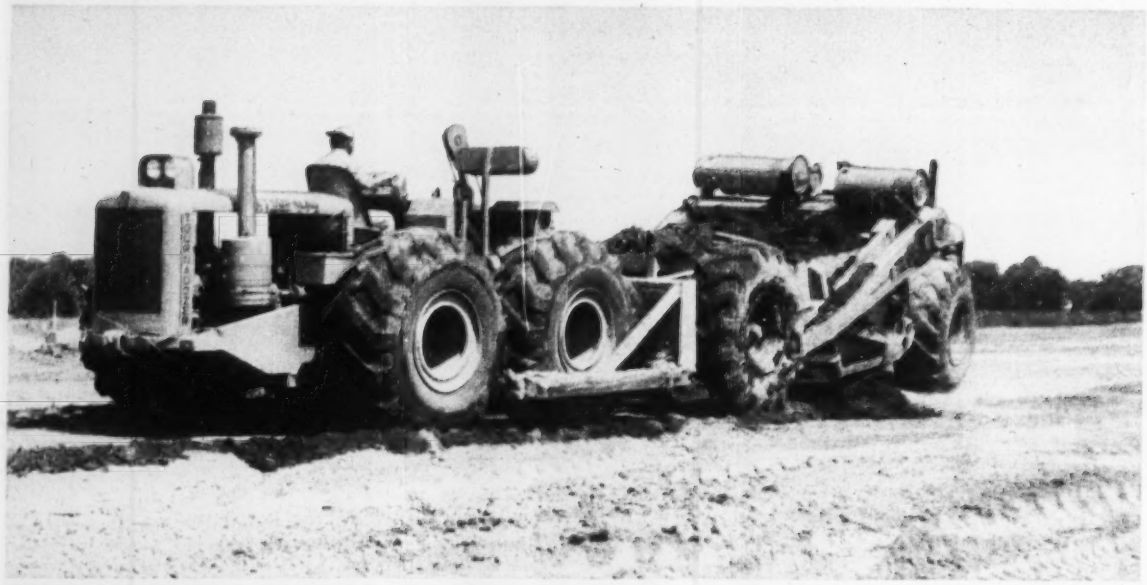
Cont'd on next page

LETOURNEAU EQUIPMENT

147

Advertisement

LeTourneau pictures of the month (cont'd) . . .



THE GREATEST OF EASE—No twisting, no turning, no wrestling bulky levers for Tournatractor operator. All he does to steer, change gears, operate blade is flick a dashboard switch. Electricity does all the work. Even in wet clay, this ease of operation pays off. This unit, assigned to push-load 5 C Tournapulls on a 434,000 yd road job in Delaware, accounted for 75 to 80 loads per 50-minute hour . . . all day long. Load time for 10 pay yds averaged 35 sec. Despite short 600 ft hauls, the one pusher kept all five Tournapulls going steady. "Tournatractor is easy to handle," says operator. "It rides nice, has plenty of push."

STRIPPING FOR STEEL—To meet a vastly increased demand for limestone from the steel industry, Kelley Island Lime & Transport Co, Cleveland, works 2 C Tournapulls 16 hrs per day stripping limestone at their Marblehead quarries. The 2 units combined remove 418 to 436 bank yds of rocky loam overburden per 50-min hr. Average cycle: 2200 ft. Number of trips per hour per unit: 19.

FILLING AN INSIDE, STRAIGHT—At Chittagong in East Pakistan, 7 Tournarockers are helping move 3,500,000 yds of sand and clay for port improvement. Dumped in and around new warehouses, material will raise ground level 3 to 4 ft to prevent flooding during the monsoon season. Haul varies from 2½ to 3½ miles. Tournarockers carry 18 tons of conveyor-loaded beach sand per trip . . dump it in a single pile, or spread it on the run, in straight, uniform windrows.

NO STRESS, NO STRAIN—Texas contractors, T. R. Vardeman & Son own 4 D Tournapulls . . . report each rig "moves 1000 yds per 10 hr day with average efficiency at 95%". Faster haul speeds over rough ground are made possible by pivot between Tournapull scraper and prime-mover which eliminates tilting strains.

LETOURNEAU LET EQUIPMENT

Write LeTOURNEAU-WESTINGHOUSE CO., Peoria, Illinois, for details.

Tournapull, Tournacrane, Tournarocker—Trademark Reg. U. S. Pat. Off. Tournatractor—Trademark Pic. 448-G

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 9 Massachusetts
STREETS AND ROADS
June 9 Massachusetts June 12 Vermont

BUILDINGS

LOW BIDS AND CONTRACTS

J. F. Fitzgerald Constr. Co., 212 Essex St., Boston, Mass. CA Est. $500,000. DEPARTMENT STORE addn., alterations, Malden Square, MALDEN, MASS. F. N. Joslin & Allied Stores, Inc., Malden Square, Malden, Mass. Bids Apr. 27. CD 4/22.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 18 Pennsylvania
STREETS AND ROADS
June 11, 23 New Jersey June 12, 18 Pennsylvania

BIDS ASKED—BUILDINGS

Pa., Shelocta—SCHOOL—B.A. 6/11—Central Indiana County Joint School Auth., Shelocta, 1 story, 170x294 ft., 59x208 ft., U-shaped, brick, steel, steel fr., Benjamin Franklin Joint School. $840,000. Plans deposit $25. Hunter, Caldwell & Campbell, 3601 Fifth Ave., Altoona, archts.

▲ **N. J., Plainfield**—HOUSING—B.A. 6/15—City of Plainfield Housing Auth., N. J. 39-1 Housing, incl. 175 units. $1,750,000.

SOON LETS CONTRACT—BUILDINGS

▲ **Pa., Phila.**—RAILWAY EXPRESS TERMINAL—Pennsylvania R. R., L. P. Struble, ch. engr. (Eastern Region), Suburban Station Bldg., 1617 Pennsylvania Blvd., one 4, soon lets contract railway express terminal. $2,000,000. CD 2/28/49.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,
D. W. Winkelman Co., Inc., Heffernan Bldg., Syracuse, N. Y., CA. $6,796,290, New York State Thruway, Mohawk Sect. Sub. 8 (Whitesboro-Utica West City Line); Woods Rd.; Mohawk St., C. R. 107 and Special Drive, 4.03 mi. Thy., 1.11 mi. Acc., M. T. 53-7, S. T. 53-19, Oneida Co.; CA $876,889, est. $945,000, New York State Thruway, Ont. Sect. Sub. 12, Rochester East-Rte. N. Y. 96 Interchange; Willow Rd.; Pittsford-Victor, Pt. 2, S. H. 8223, 1.1 mi. Thy., 4.26 mi. Acc. O. T. 53-7, S. T. 53-18, R. C. 53-34, Ontario Co. Bids 5/7. CD 5/12 under LB.

Hendrickson Bros., Inc., 63 N. Central Ave., Valley Stream, N. Y. CA. $750,000. exten. to 7,500 ft. of Northwest-Southweast Runway at plant airfield, FARMINGDALE, N. Y. Republic Aviation Corp., Conklin St., Farmingdale, N. Y.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. 4th St., Harrisburg,
Glasgow, Inc., Church and Waverly Rds., Glenside, Pa. LB $3,021,507. constr. 3.32 mi. Delaware River Exten. (Sec. 32-B) of Pennsylvania Turnpike, Upper Merion Twp., Montgomery Co. Bids May 25. CD 5/4.

BUILDINGS

LOW BIDS AND CONTRACTS

CWC Constr. Corp., 105 Court St., Brooklyn 2, N. Y. LB $940,500, general constr. for addn. and modernization PUBLIC SCHOOL 154, 102 St. and 75 Rd., FLUSHING, N. Y. Bd. Educ., 49 Flatbush Ave. exten., Brooklyn 1, N. Y. Bid May 19. CD 4/24.

▲ **Grove Park Homes,** c/o Karl Bloch, archt., 7 Landsdown Ave., Merrick, N. Y. Owner Builds. $1,000,000 107 HOUSES on tract at South Grove and Layton Sts., FREEPORT, N. Y.

▲ **Bryna Homes,** c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. $1,200,000. 120 HOUSES on tract at Lepkamp Ave., north of Jericho Turnpike, HUNTINGTON, N. Y.

Warwicks Gardens, c/o Ben Fineman, 121 S. Broad St., Phila., Pa., Separate Contracts, $720,000, RESIDENTIAL DEVELOPMENT, Warwick Rd., SOMERDALE, N. J. Edward A. L. Cox, 709 Market St., Camden, N. J., archt.

▲ **Somagre Constr. Corp.,** 163-18 Jamaica Ave., Jamaica, N. Y. Separate Contracts, $2,500,000, RESIDENTIAL DEVELOPMENT, TRENTON, N. J. Charles A. Wood, 630 Broadway, Amityville, N. Y., archt.

Brownsville Constr. Co., Coal Rd., Brownsville, Pa. LB $855,400, 1 and 2 story, 300x400 ft., brick, block, steel, South Junior HIGH SCHOOL, Baldwin Twp., PITTSBURGH, PA. School Dist. of Baldwin Twp., Clairton Rd., Pittsburgh, Pa. Bids May 20. CD 5/5.

▲ **Aldon Constr. Co.,** Woodward Bldg., Wash., D. C., CA EST. $2,268,000. approx. 126 brick HOMES at Parkview, BETHESDA, MD. B-Y Corp., Woodward Bldg., Wash., D. C. M. Noble, 1019 15 St. N.W., Wash., D. C., archt.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 12 Kentucky June 19 Alabama
STREETS AND ROADS
June 12 Kentucky June 19 Alabama

BIDS ASKED—BUILDINGS

▲ **W. Va., Fairmont**—OFFICE—B.A. 6/23—Monongahela Power Co., Fairmont, 3 story, bsmnt., L-shaped, 56x100x200 ft., brick, concrete, steel office. $1,400,000. C. E. Silling & Assocs., 314 Masonic Bldg., Charleston, archts. CD 1/30/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort,
Ruby Constr. Co., Inc., Madisonville, Ky. LB. $856,274. overhead b. conc. base, binder and surf. Class I 0.404 mi. Eastern Parkway, in Louisville (Louisville Paducah Rd.), U-UG 26 (17), SP 56-158, Jefferson Co. Bids May 22. CD 5/7.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Knox Corp.,** Thomson, Ga., Owner Builds, $3,000,000. 500 Negro RESIDENCES, on Old Savannah Rd, AUGUSTA, GA.

▲ **T. J. Northcutt & Co.,** 1722 Peachtree St., N. W., Atlanta, Ga., Owner Builds, $1,600,000, 100 RESIDENCES, DECATUR, GA. CD 4/15.

▲ **Baptist Hospital Assn. of Jacksonville,** 1100 San Matce Blvd., Jacksonville, 7, Fla., rejected bids May 19 Section 1, 5 story, rein.-con. HOSPITAL, JACKSONVILLE, FLA., LB, $2,849,977. CD 5/26, under LB.

▲ **Bob Jacobson,** 3825 Henderson Blvd., Tampa, Fla., Owner Builds, $3,000,000, 165 RESIDENCES, TAMPA, FLA. Pullara & Bowen, 1815 W. Platt St., Tampa, Fla., archts.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 11 Indiana
STREETS AND ROADS
June 11, 16 Indiana

BIDS ASKED—BUILDINGS

▲ **Ill., Evanston**—CENTENNIAL HALL—B.A. 6/12—Northwestern University, 619 Clark St., Kresge Centennial Hall, Hinman and Sheridan Blvds. $3,000,000. Holabird-Root-Burgee, 180 N. Wabash St., Chicago, 1, Ill., archts. CD 12/6/49.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Krieghoff Co.,** 6661 French St., Detroit, Mich. CA Est. $1,500,000. 2 story, bsmnt., brick, steel, concrete Senior High SCHOOL, Schoolcraft and Beech Sts., REDFORD, MICH. Redford Twp., John Turner, secy School Bd., Redford, Mich. Bids May 7. CD 4/20.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 16, 17 Texas
STREETS AND ROADS
June 16, 17 Texas June 17 Montana

BIDS ASKED—BUILDINGS

▲ **Tex., Freeport**—PLANT—Bids Asked—Dow Chemical Co., Freeport, polyethylene plant, 25,000,000 lbs annual capacity. CD 4/22.

▲ **Tex., Lubbock**—STORE—Bids Asked—Dunlap's, 901 Broadway, department store. $1,200,000. Butler-Brasher, 412 Avenue M, archts. CD 1/14.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Koppers Co., Inc.,** Harry E. Roche, mgr., Port Arthur, Tex. Owner Builds. $3,500,000. chemical PLANT unit, Ethylene oxide-benzine, PORT ARTHUR, TEX. CD 2/13/51.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Wash., Spokane**—NOSE DOCKS—B.A. 6/18—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, 10 structural steel multi-purpose nose docks Fairchild Air Force Base, Inv. 53-131. $3,500,000. Plans deposit $25. CD 4/3, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Ferranti Electric Inc.,** 30 Rockefeller Plaza, New York, N. Y., CA. $857,600, 6,500 kw transformers at McNary Power House, Inv. 53-87, OREGON. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids May 5. CD 5/11, under LB.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento,
Baun Constr. Co., P. O. Box 1281, Fresno, Calif., LB, $250,385, grading, surf. 1.6 mi. between Loma Linda and Watsonville Jct., Montery Co., LB $162,423 seal coat 12.2 mi. Alisal-Old State Road, Monterey Co.;
Frederickson Bros., 1259 65 St., Emeryville, Calif., LB, $1,176,448, grading, paving 4 bridges 2.2 mi. between Crow Canyon Rd. and near Foothill Blvd., Alameda Co.;
Claude C. Wood Co., P. O. Box 599, Lodi, and Macal Improvement Co., Rt. 1, Box 535, Antioch, Calif., LB, $492,238 grading 3.5 mi., surf. 10 mi. between Markleeville and Mono Co. line, Alpine Co.;
Oilfields Trucking Co., Box 751, Bakersfield, Calif., LB, $169,932, surf. 7.8 mi. between Sand Tract near Sivert and Cable, Kern Co.;
Antioch Paving Co. Inc., Rt. 1, Box 535 Antioch, Calif. LB $181,089, surf. 4.8 mi. between Outlet Creek and Reeves Creek near Willits, Mendocino Co.;
Cecil L. Moore, P. O. Box 166, San Leandro, Calif. LB, $133,484, grading, drainage facilities 4.5 mi. near Dos Rios, Mendocino Co.;
Joe Vicini, P. O. Box 206, Placerville, Calif., LB $131,328, grading, surf. 7 mi. near Grass Valley and Yuba Co. Line, Nevada Co. Bids May 20. CD 4/29.
CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,
Maddona Constr. Co., P. O. Box 910, San Luis Obispo, Calif., CA, $633,897, grading, bridges 6.4 mi. across San Marcos Creek between Paso Robles and San Miguel, San Luis Obispo Co. Bids May 6, awarded May 20. CD 5/19, under LB.

† **CALIFORNIA**—Bureau P. Rds., Dpt. Commerce, 1101 Flood Bldg., San Francisco,
Eaton & Smith, 1215 Michigan St., San Francisco, Calif. CA, $558,526, clearing, grading 4.192 mi. Huntington Lake Sierra National Forest, Flt 48-C1, D, Fresno Co. Bids Apr. 14, awarded May 19. CD 4/23, under LB.

▲ **Macco Corp.,** 14409 S. Paramount Blvd., Paramount, Calif. LB, $1,185,245, constr. Ocean Blvd. and 9 Sts. Bridges, LONG BEACH, CALIF. Long Beach Harbor Dpt., 1331 El Embarcadero, Long Beach, Calif. Bids May 21. CD 5/4.

CANADA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Shawinigan Eng. Co. Ltd.** 600 W. Dorchester St., Montreal, Que., CA, $780,000, 45 mi. transmission line Beauceville to Chaudiere; CA, $827,000 10 mi. transmission line Quebec City to Chaudiere Quebec Shawinigan Water & Power Co., 600 Dorchester St. W., Montreal, Que. CD 5/27.

BUILDINGS

LOW BIDS AND CONTRACTS

D. Robinson Constr. Ltd., 90 Cavan St., Nanaimo, B. C. CA, $948,478, rein.-con. brick BOYS' SCHOOL Branan Lake, NANAIMO, B. C. B. C. Dpt. P. Wks., Parliament Bldgs., Victoria, B. C. Bids May 14. CD 5/22, under LB.

George Hardy Ltd., 163 Wicksteed Ave., Toronto, Ont., CA, $750,000 four 1 story brick SCHOOLS, Willowdale, TORONTO, ONT. First Twp. School Area of North York, 7 Kenneth St., Willowdale, Ont. Bids May 19, awarded May 22. CD 5/8.

▲ **V. V. De Marco Properties Ltd.,** Colony Rd., Toronto, Ont., Owner Builds, $1,000,000, 7 Story, 21x132 ft. steel, brick, rein.-con. APARTMENT BLOCK 2 floors underground garage, Eglinton Ave. W., near Spadina Rd., TORONTO, ONT. Wallace, Carruthers & Assoc. Ltd., 35 Isabella St., Toronto, Ont., engrs. Peter Caspari, 496 Church St., Toronto, Ont., archt.

J. H. Brien, 6220 Sagard St., Montreal, Que., CA, $700,000, 100 30x41 ft., concrete brick BUNGALOWS ST. MARTIN, QUE. Les Enterprises Val Martin, 210 Val Martin Rd., St. Marin, Que. P. Colongelo, 3710 Cote St. Antoine Rd. Montreal, Que., archt.

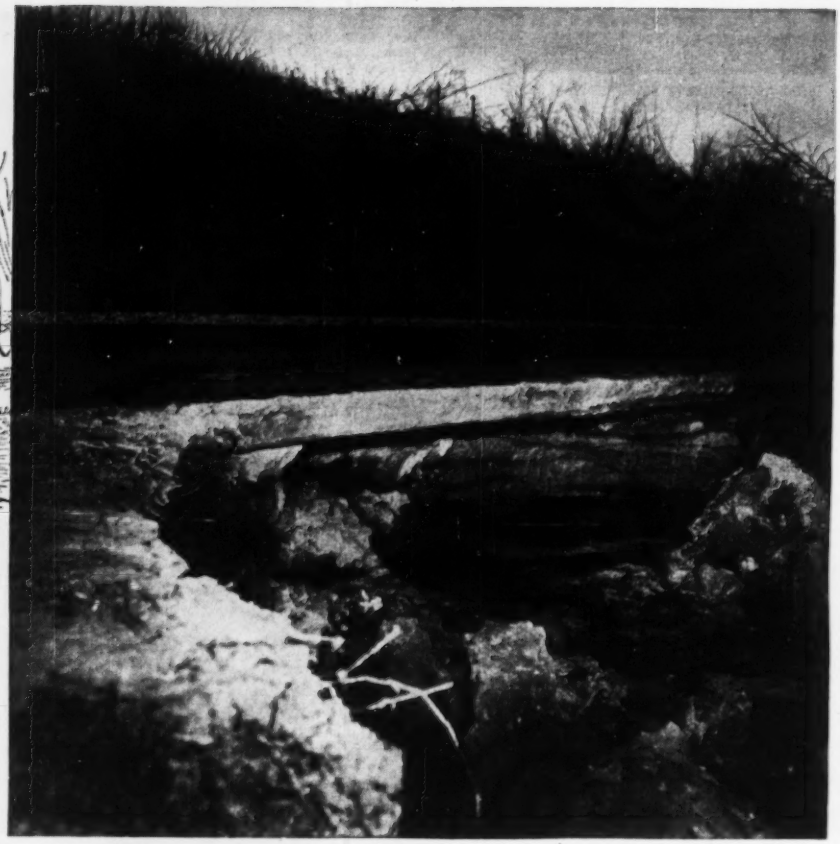
ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **ALASKA**—Alaska Road Comn., Dpt. Interior, 4 and Harris Sts., Juneau,
Morrison-Knudsen Co., Inc., 319 Broadway, Boise, Idaho, CA. $2,089,003. clearing, grading, drainage, surf. 45.3 mi. Richardson Hy. Sect. G Bids Mar. 17. CD 3.24, under LB.

(Proposal Advertisements see pp. 155 to 157)



Highway Washout Demonstrates the Stability of SOIL-CEMENT Pavement

This photograph is a graphic demonstration of how stable soil-cement pavement* is. It shows a soil-cement base bridging a gap about 8 ft. long and 4 to 5 ft. wide after a storm washed out the subgrade.

The washout shown occurred on Cotton Grove Road in Madison County, Tenn. The unsupported span of soil-cement base carried normal traffic for some time before the washout was discovered and the section blocked to traffic. The 6-in. soil-cement pavement showed no damage.

Soil-cement has established a record for durability and economy for light-traffic, low-cost roads and streets. Thousands of miles of dependable, all-weather soil-cement pavements are now in use all over America. Many have served for 10, 15 and more years with little maintenance expense.

Soil-cement roads and streets are economical because (1) about 85 per cent of the required material is usually soil on or near the site and (2) they are easy and fast to build. For more information write today for free illustrated literature, distributed only in the United States and Canada.

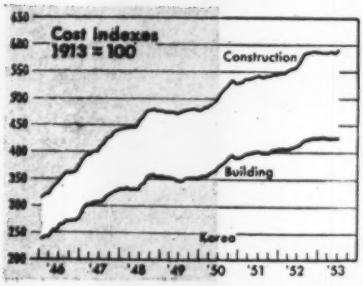
*Soil-cement pavement consists of a soil-cement base and a bituminous surface.

PORTLAND CEMENT ASSOCIATION

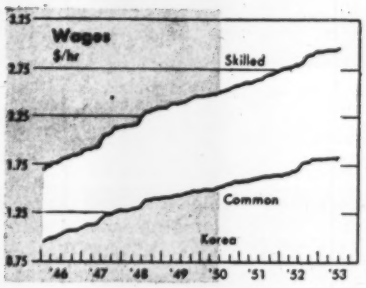
DEPT. A6a-17, 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

JUNE CONSTRUCTION SCOREBOARD

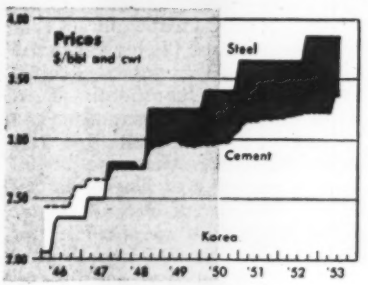


ENR INDEXES (1913 = 100), 20-cities' average	1953 June	% Change from last Month	% Change from last Year
Construction Cost	593.35	+0.7	+5.6
Building Cost	426.65	+0.04	+3.4
WAGE RATES, 20-cities' average			
Common	$1.852	+1.5	+8.5
Skilled (aver. 3 trades)	2.979	+0.8	+6.1
Bricklayers	3.302	+0.6	+5.1
Structural Ironworkers	2.916	+0.8	+6.4
Carpenters	2.721	+1.1	+7.0
MATERIAL PRICES, 20-cities' average			
Cement, bulk, per bbl	$3.365	0.0	+5.2
Structural Steel, (3-mill aver.), per cwt	3.850	0.0	+5.5
Sand, per ton	2.174	0.0	+3.3
Lumber, 2x4 Fir, per M. ft. bm	105.263	−1.7	−4.6
Lumber, 2x4 Pine, per M. ft. bm	92.833	−0.03	−0.2
Common brick, per M	32.304	+0.2	+3.8
Ready-mixed concrete, per c. y	11.773	+0.4	+7.9
Structural Clay Tile, 3x12x12 per M	158.506	0.0	+4.8



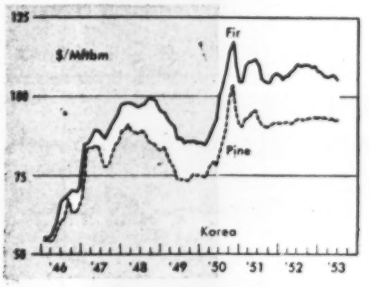
CONTRACTS AWARDED (Millions)	1953 May (4-weeks)††	1953 5-Mos.	% Change from '52 May (5-weeks)††	% Change from '52 5-Mos.
Total U. S. (ENR reported)	$1,083.8	$6,653.6	− 5.5	+17.9
Private	635.1	3,909.2	+ 7.6	+29.9
Public	448.7	2,744.4	−19.4	+ 4.3
Federal	97.7	642.1	−50.4	−26.0
ENR Volume Index, '13 = 100	499	553	− 9.9	+11.3
NEW CAPITAL (Millions)				
Total	929.4	3,820.4	+39.0	+16.9
State & Municipal Bond Sales	502.8	1,945.3	+72.1	+39.4
Corporate Security Sales	424.2	1,824.2	+21.1	+ 4.1
Federal (non-federal work)	2.4	50.9	−90.9	−57.7
Federal (federal work)	.....	.....	.....	.....

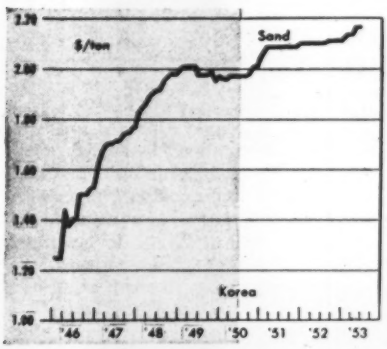
†† Computed on weekly Average

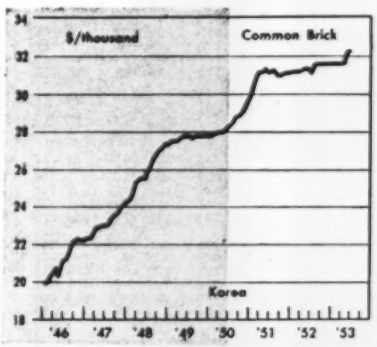


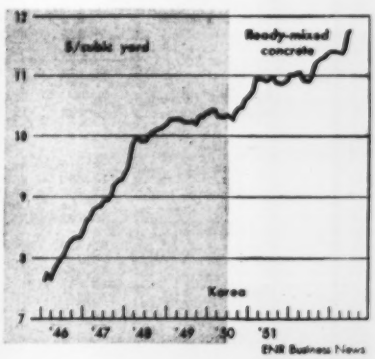
MATERIAL SHIPMENTS & LABOR SUPPLIES (Millions)	Mar.(M) Apr.(A)	3-Mos.(3) 4-Mos.(4)	% Change from Mo.	% Change from Yr.-Cum.
Cement bbls, Bu. of Mines	20.813(M)	48.488(3)	+30.1	+12.6
Fabr. Struc. Steel, tons AISC	.260(A)	1.018(4)	+12.5	+ 2.7
Lumber, mil. ft. bm., NLMA	3.356(M)	9.333(3)	+10.9	+ 5.8
Lumber Prod., mil. ft. bm., NLMA	3.284(M)	9.173(3)	+ 8.3	+ 5.4
Contract Constr. Employ., BLS	2.414(A)	2.324(4)	− 0.9	− 0.8

† Average.









May awards show big drop, but some lines are booming

May contract awards, as reported to ENGINEERING NEWS-RECORD and the Construction Daily, were lower on the basis of average weekly volume than they were in the same month last year, and also compared with April 1953. The decline was substantial. Still, this May was next to the highest May on record.

Average weekly volume was $271 million, compared with $287 million in May 1952, the record month. There was also a decline in April, compared with April 1952, but this time the drop is much bigger. The weekly average of awards is also distinctly lower than the $292-million weekly average for April 1953.

These figures are presented in terms of average weekly volume, because May this year has four weeks, compared with five weeks in May 1952, and April 1953.

However, the cumulative total of heavy construction contracts for the first five months is $6.7 billion, an all-time high and 18% above the total for the first five months of 1952, itself a new high.

• **Reasons**—Two of the major factors behind May's relatively poor showing are the same as in April: (1) The lower level of industrial awards (ENR May 28, p. 23), and (2) the effects of the economy drive upon federal awards. In addition, this time state and municipal awards were not an offsetting factor. They averaged $88 million per week, down 23% from the April all-time high.

May industrial awards average $35 million per week, slightly higher than in April, but way below the $57-million weekly average in May 1952, and the $80-million weekly average for the first quarter of this year. Federal awards averaged only $24 million, compared with $27 million in the previous month, and $49 million in May 1952.

• **Commercial boom**—However, commercial building awards and private mass housing contracts set a fast pace, with the result that total private construction contracts were 8% above May 1952 on the basis of weekly volume, and 6% over April 1953.

Commercial building, with $133 million, had its biggest month so far this year. For the first five months, commercial awards are a record $477 million, a sensational 83% increase over the 1952 period. Private mass housing awards in May were $320 million, biggest since January. This brings the total for the year to date to $1,744 million, 39% higher than last year.

In public work, highways and sewerage continued to show big gains. Public building, other than housing, picked up a little from April. But waterworks awards were lower. And public housing awards dropped to a tiny $8 million. Earthwork and drainage contracts were also much lower this month.

Fabricated steel bookings hit two-year peak in April

In spite of the overall drop in new awards, construction activity on present projects is going along at a very high rate. One good index of this is bookings of fabricated structural steel. Reports received by the American Institute of Steel Construction are that April bookings were the highest in the last 24 months. They totaled 306,000 tons. For the first four months, bookings were 1,012,000 tons, an increase of 15% over the same period last year.

Shipments so far this year are 1,018,541 tons, leaving a backlog of 2,168,000 tons as of the end of April. About 47% of this backlog was scheduled for production within the four months between the end of April and the end of August.

ENGINEERING CONSTRUCTION CONTRACTS—MAY 1953

ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation drainage and irrigation,* $34,000; *other public works,* $60,000; *industrial buildings,* $82,000; *other buildings,* $300,000

Four Weeks—Thousands of Dollars (000 Omitted)

	May, 1953							—U. S. Cumulative— Five Months		% Change	Canada May
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	Total U. S.	1953	1952	'52 to '53	1953
Public Works											
Waterworks	589	1,957	2,854	3,182	6,486	1,250	**16,318**	**104,858**	100,533	+ 4	2,607
Sewerage	1,303	17,961	6,225	8,631	9,417	3,505	**47,042**	**172,347**	98,572	+75	1,074
Bridges	2,763	11,192	3,736	9,594	3,188	2,860	**33,333**	**313,697**	142,801	+120	1,082
Earthwork and drainage	829	1,605	3,074	531	2,327	8,097	**16,463**	**144,823**	240,134	−40	2,512
Streets and roads	6,278	31,013	32,984	27,139	29,150	20,775	**147,339**	**682,080**	594,191	+15	13,415
Public buildings, residential	930	411	1,570	4,528	701	.....	**8,140**	**247,500**	415,832	−40	411
Other public buildings	8,556	26,620	33,120	31,089	22,610	13,165	**135,160**	**713,320**	733,096	− 3	12,224
Unclassified	2,041	5,867	13,368	2,478	13,050	8,117	**44,921**	**365,797**	306,934	+19	4,239
Total public	**23,289**	**96,626**	**96,931**	**87,172**	**86,929**	**57,769**	**448,716**	**2,744,422**	**2,632,093**	**+ 4**	**37,564**
Federal government (included in above classifications)	3,123	13,217	27,324	18,036	20,466	15,581	**97,747**	**642,079**	868,414	**−26**	12,483
Private											
Bridges	.....	.....	.....	.....	.....	.....	.....	5,552	9,900	−44	.....
Industrial buildings	8,517	32,721	21,363	25,060	41,477	12,111	**141,249**	**1,355,337**	1,256,102	+ 8	58,722
Mass housing	15,325	80,240	81,456	99,037	30,934	12,660	**319,652**	**1,743,943**	1,250,402	+39	14,328
Commercial buildings	22,000	40,750	13,564	19,625	35,193	1,427	**132,559**	**477,083**	260,219	+83	12,335
Unclassified	94	110	14,785	2,382	22,173	2,075	**41,619**	**327,291**	233,344	+40	1,689
Total private	**45,936**	**153,821**	**131,168**	**146,104**	**129,777**	**28,273**	**635,079**	**3,909,206**	**3,009,967**	**+30**	**87,074**
Total Engineering Construction:											
May, 1953—4 weeks	**69,225**	**250,447**	**228,099**	**233,276**	**216,706**	**86,042**	**1,083,795**	.....	.....	.....	**124,638**
April, 1953—5 weeks	94,143	388,924	275,029	211,049	328,084	163,015	**1,460,244**	.....	.....	.....	143,478
May, 1952—4 weeks	77,266	277,058	272,240	272,694	350,466	183,918	**1,433,642**	.....	.....	.....	213,155
Five Months—1953	**322,065**	**1,423,332**	**1,166,366**	**1,605,276**	**1,375,466**	**761,123**	.....	**6,753,628**	.....	**+18**	**473,701**
Five Months—1952	253,113	1,056,285	1,244,178	872,133	1,528,146	688,205	.....	.....	5,642,060	.....	554,279
% Change '52 to '53	+27	+35	−6	+84	−10	+11	.....	.....	.....	.....	−15

Housing money

It costs authorities plenty, despite backing from U.S.

In spite of the fact that the U. S. government guarantees it, the bond issue sold to underwriters last week by 46 local housing authorities cost the borrowers an average interest rate of 2.82%. That's a sizable jump from the 2.40% average interest charge when local authorities sold a similar issue last January. Actual interest cost to the different borrowers varied with the size of the issue and the reputation of the borrower.

This time, the local housing authorities sold about $122.5 million of bonds. In five previous offerings since July, 1951, various authorities have sold a total of $766 million. The money is used to build low-rent housing projects. And there's an estimated backlog of from $1 billion to $1.5 billion more of these bonds to be sold—big business for construction men.

The interest cost that local authorities have to pay on these bonds is important to the federal government. Through the Public Housing Administration, the U. S. promises to make up the difference if debt service and other costs of running these projects is greater than rental income. Naturally, a rise in interest charges boosts costs.

• **Out of line**—Housing Administrator Albert Cole believes that the interest rates local authorities have to pay do not reflect the fact that they are not only tax-exempt, but government-guaranteed. Before last week's issue was sold, he got a legal opinion from Attorney General Herbert Brownell spelling out this fact.

It didn't do much good. Average interest cost was about the same as the Daily Bond Buyer's yield index for 20 municipal bonds. In other words, investors consider these government-backed housing bonds as no better than municipals in general.

Yet Wall Streeters point out that an investor who buys these bonds when they yield about 2.80%, instead of Treasury bonds, is getting a great bargain. For a corporation, this tax-exempt yield is the same as a taxable yield of 5.83% from government bonds—impossible to get these days. For an individual taxpayer in the $50,000 bracket this is the same as a taxable yield of 12.2%. In the $100,000 bracket, the equivalent taxable yield would be 28%.

Of course, these bonds are not as easy as Treasury bonds for an investor to sell, especially the bonds of authorities where outstanding volume is small and the community not well known. But many Wall Street people agree with Albert Cole. They think this shouldn't make that much difference.

Cost indexes are rising after eight-month lull

After eight months of relative stability—the longest such period since 1949—construction costs began to move slowly upward this month.

The reason: The first wave of new wage contracts has hit the settlement stage. Seven of the 21 cities used in ENGINEERING NEWS RECORD'S cost indexes reported wage increases in May. These boosts more than offset declines in lumber prices in six cities.

As a result, ENR's Construction Cost Index moved to 593.35 for June, based on 1913 as 100. This is an increase of 0.7% above May. The Building Cost Index, also based on 1913, is 426.65 this month, practically unchanged.

So far this year, both indexes have risen much more slowly than in 1952. For the first six months, the Construction Cost Index is up 1%, compared with 2.6% in the first half of 1952. The Building Cost Index has risen only 0.4% so far this year, compared with a 1.7% rise in the 1952 period.

Here is why: Wage rates have been going up more slowly. Also lumber prices, especially fir, have drifted down in 1953, while last year they climbed 2.6% in the first half.

So far this year, wage hikes for construction workers seem to be following the expected pattern: 10 cents to 15 cents more per hour, split between straight wages and fringe benefits. Five cities reported higher wages for common labor this month, ranging from 10.5 cents to 15 cents. Skilled rates, up in seven cities this month, followed the same pattern. However, there have been a few exceptions.

More steel

Detroit steel mill plans $100-million expansion

Steel production facilities at the doorstep of the auto industry, largest consumer of the metal, will enlarge another full-size notch. McLouth Steel Corp., small independent of comparatively minor stature, plans a $100-million expansion—about double its present assets. That enlargement will vault it into the ranks of the substantial operators.

Only lack of capital, presumably,

ENR Cost Indexes in 21 Cities

1913 = 100

City	Construction Cost 1953 June	Construction Cost 1953 May	Construction Cost 1952 June	Building Cost 1953 June	Building Cost 1953 May	Building Cost 1952 June
Atlanta	438	438	397	376	376	353
Baltimore	525	525	511	415	415	414
Birmingham	450	450	417	374	374	358
Boston	623	625	614	419	421	422
Chicago	690	662	626	443	434	416
Cincinnati	613	613	553	424	424	406
Cleveland	707	684	685	436	432	419
Dallas	463	456	437	387	387	371
Denver	582	603	572	434	453	433
Detroit	664	664	625	442	439	424
Kansas City	623	623	588	452	446	434
Los Angeles	612	612	574	421	421	407
Minneapolis	655	629	593	459	455	438
Montreal	516	516	510	399	399	393
New Orleans	486	486	437	407	407	381
New York	652	654	618	483	485	465
Philadelphia	635	635	616	479	479	472
Pittsburgh	608	608	577	440	440	416
St. Louis	648	626	608	450	446	444
San Francisco	556	558	565	390	392	386
Seattle	636	636	620	401	401	389

has delayed steel mill growth around Detroit, where so many hundreds of thousands of tons are consumed annually. Great Lakes Steel Corp., a division of National Steel, has been the only really big producer in the area. Ford was the one other integrated mill of size; Rotary Electric Furnace Co. ran a quiet third.

On McLouth's program is a new ore dock, a blast furnace, a melt shop extension which will have two new electric furnaces, Bessemer converters, 10 new soaking pits, a cold reducing mill building and a continuous hot strip mill and stands.

• **GM investment**—An intriguing aspect of the McLouth move is that General Motors Corp. will have a $25-million stake in it. GM agreed to lend that amount to McLouth and will take part of it out gradually in finished steel. In the past, GM has made similar deals with other steel producers.

Why would GM invest $25 million in steel at a time when most thinking is that the big bulge in demand is about to taper off? The answer is not too hard to figure out.

First, GM and others in the industry figure auto production is on a new plateau, far higher than prewar. Second, the industry generally would like more steel closer to home. There is an actual cost saving, of course. Although the price for Detroit-made steel is higher than the base prices from other points, it is still lower than tonnage delivered from other points.

Great Lakes Steel has been profiting from this. It's the sole integrated sheet producer selling to all the industry (Ford keeps virtually its entire output for itself). It is no secret that the auto companies would welcome Detroit competition with Great Lakes, just as they welcome competition on anything they buy. McLouth Steel has been partly customer financed on past growth moves; reports have been that GM was an active factor then.

GM made its first move into steel late in 1950 with Jones & Laughlin Steel Corp. GM loaned J&L $28 million for this expansion to expand its Otis works at Cleveland, a mill—interestingly enough—which makes the wide sheets that the auto industry treasures so highly.

Having gotten its feet wet after looking at the steel picture for some time, General Motors made another deal in the spring of 1951, lending $40 million to Republic Steel Corp. to expand its Cleveland facilities. General Motors got 3% for its money, and also got a commitment for a share of the increased production at Cleveland if it wants it.

• **Other deals**—Tieups between automobile companies and steel companies began before GM got interested. Probably the virtues of such deals began to be apparent to Detroit after Kaiser-Frazer Corp. was formed. A newcomer without mill history, it was able to get all the steel it needed because it had ingots to trade.

Last year, Packard Motor Car Co. loaned Great Lakes Steel $2 million. Chrysler Corp. also made an $8-million loan, only a few months ago to Pittsburgh Steel Co.

Ford Motor Co., alone of the auto makers, is in the steel business directly. Its blast furnaces and open hearths at Detroit produce somewhat over 1.5-million tons of steel a year, and its rolling mills give it much of the flat stock it needs. This tonnage is about half of the total steel requirement for the company, and it represents an approximate doubling of output capacity since World War II. Ford figures that is sufficient, that it need not finance anybody else.

IH arranges to take over part of Bucyrus-Erie line

International Harvester Co., of Chicago, has long hankered to get into the industrial earth-moving business with a full line of equipment. But it lacked the implements to go with its heavy trucks and tractors.

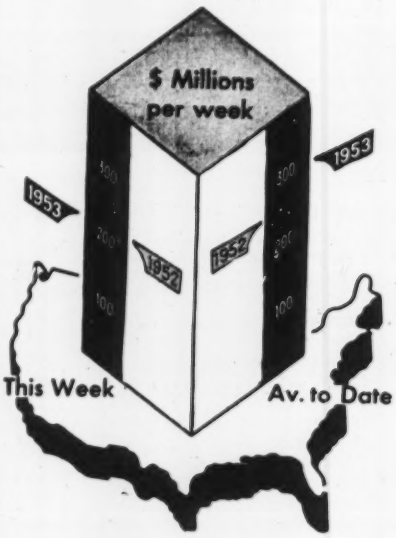
Last week, IH announced a deal with Bucyrus-Erie Co., of South Milwaukee, Wis. The Bucyrus-Erie line of industrial tractor equipment—mostly bulldozers and scrapers—will be sold, distributed, and serviced by IH. Eventually, they will be made by IH.

Bucyrus-Erie has long made allied equipment for Harvester's industrial tractors, and has sold directly to Harvester distributors. But starting next Jan. 1, IH will buy directly from Bucyrus-Erie to the limit of that company's present tractor-equipment capacity. It will then resell to its own distributors.

Over a period of time and without interrupting continuity of production, Bucyrus-Erie will discontinue making this equipment and IH will take it up in its own plants.

Activity This Week

As reported to ENR (in millions of dollars)



Amount of contracts let

	This Week	Cumulative 23 wks 1953	1952	% chge
Federal	$45.7	$687.7	$887.8	−23
State and Municipal	82.8	2,185.2	1,863.4	+17
Total pub.	128.5	2,872.9	2,751.2	+4
Total priv.	86.8	3,996.0	3,116.8	+28
U. S. Total	**$215.3***	**$6,868.9**	**$5,868.0**	**+17**
Contracts by type of work				
Waterworks	$4.6	$109.4	$103.0	+6
Sewerage	2.4	174.6	102.9	+70
Bridges	7.1	326.2	166.1	+96
Highways	47.2	729.2	632.5	+15
Earthwork, Waterways	25.9	171.0	242.1	−29
Buildings: Public excl. hsg.	27.4	740.9	776.1	−5
Housg., pub.	3.8	251.2	418.6	−40
Housg., priv.	51.5	1,795.4	1,312.2	+37
Commercial	12.2	489.4	277.9	+76
Industrial	18.8	1,374.3	1,270.3	+8
Unclassified	14.4	707.3	566.3	+25
Total	**$215.3***	**$6,868.9**	**$5,868.0**	**+17**

* 4-day week.

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Years = 100 1953	1913	1926	1949
Construction cost	June	593.35	285.22	124.39	
	May	589.21	283.23	123.52	
Building cost	June	426.65	230.63	121.28	
	May	426.47	230.54	121.23	
Volume	May	499	293	144	

OFFICIAL PROPOSALS

- **RATE: The rate for Official Proposal advertising is $1.50 per line (or fraction set solid; and where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.**
- **CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.**
- **SEND COPY TO: Official Proposal Div. Engineering News Record 330 W. 42nd Street New York 36, N. Y.**

Bids: June 16, 1953

Miscellaneous

SEALED PROPOSALS will be received by the President of the Levy Court of New Castle County, Room 134-A, Public Building, Wilmington, Delaware, until 11:00 A.M. Daylight Saving Time, on June 16, 1953 and at that time publicly opened for contracts involving the following approximate quantities:

CONTRACT SD-47
ROSEVILLE PARK

Lump Sum Clearing & Grubbing
9,000 C.Y. Excavation
100 C.Y. Borrow Pit Stripping
6,000 C.Y. Selected Borrow
1,620 Tons Hot-Mix Asphaltic Conc.
3,000 Gal. R. C. 1 Tack Coat
0.5 C.Y. Cement Concrete Masonry
35 L.F. 12" R. C. Pipe
364 L.F. 15" R. C. Pipe
90 L.F. 18" R. C. Pipe
50 L.F. 24" R. C. Pipe
20 S.F. 4" Sidewalk
20 S.F. Replace Flagstone Walk
35 L.F. Resetting Brick Curb
1 Ea. Type "B" Catch Basin
3 Ea. Type "C" Catch Basin
1,640 Lbs. Castings
3,700 S.Y. Top Soil
0.80 Ac. Seeding
2,100 S.Y. Sodding
80 L.F. Perforated Corrugated Metal Pipe 6" Underdrain

CONTRACT-SD-51
WOODCREST
Surry Ave.

1,075 C.Y. Excavation
1,150 Tons Selected Borrow
840 Tons Waterbound Macadam
325 Tons Hot-Mix Asphaltic Conc.
560 Gal. R. C. 1 Asphlat
30 L.F. 4" V. C. Pipe
175 S.Y. Cement Concrete Gutters (6")
2,075 L.F. Integral Curb & Gutter
30 S.F. Cement Concrete Sidewalk (4")
1,800 S.Y. Topsoil
0.35 A. Seeding

Attention is called to the Special Provisions in the proposal, specifications and contract agreement.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the County Engineer.

Each proposal must be accompanied by a surety bond, certified check, or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Suburban Development Contract No. ——."

The Contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

Complete sets of plans and specifications may be obtained from the County Engineers Office, upon receipt of two dollars ($2.00) for each contract, which amount will not be refunded.

Make checks payable to the Levy Court of New Castle County.

LEVY COURT OF NEW CASTLE COUNTY
BY: JOHN TAYLOR
COUNTY ENGINEER

Bids: June 11, 1953

Lateral Sewer Extension

SOUTH FALLSBURGH SEWER DISTRICT
TOWN OF FALLSBURGH, N. Y.

1. Sealed proposals for the installation of lateral sewers and accessories in the South Fallsburgh Sewer District, Town of Fallsburgh, N. Y. will be received by the Town Board at the Town Clerk's Office, South Fallsburgh, until 3:00 o'clock, P. M., June 11, 1953, and there publicly opened and read immediately thereafter.

2. The work will consist of providing all labor, materials, equipment and incidentals required for the construction of approximately 8200 feet of 8-inch and 10-inch diameter clay pipe sewers, including manholes and house connections.

3. Plans, specifications, bidding and contract documents may be examined at the office of the Consulting Engineers, Alexander Potter Associates, 50 Church Street, New York 7, N. Y. and there obtained upon a Deposit of FIFTEEN ($15.00) DOLLARS PER SET. Full refund of Deposit will be made to actual bidders for return of One (1) Set, in good condition, within two weeks after closing date of bids; refund for return of all other sets, in good condition, within the same period, will be Fifty Percent (50%) of the Deposit.

4. All proposals must be on the form contained in the Specifications furnished by the Town.

5. All bids must be accompanied by a Certified Check or Acceptable Bidder's Bond in the amount of Ten Percent (10%) of the amount of the Bid, made payable to the Town of Fallsburgh. Said checks will be returned to all, except the three (3) lowest bidders, not later than ten (10) days after opening of bids.

6. The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the contract and upon the payment of all persons supplying labor and furnishing materials on the construction of the work.

7. No bidder may withdraw his bid within Thirty (30) Days after closing date for receipt of bids.

8. The Town Board reserves the right to reject any or all bids and to waive any informality in the bid.

TOWN OF FALLSBURGH
By: MORTIMER MICHAELS
TOWN SUPERVISOR

DATED: May 18, 1953.

Bids: June 11, 1953

Required Grading & Drainage

Sealed proposals will be received by the West Virginia Turnpike Commission for:

CONTRACT NO. 18

The work to be done under this contract consists in performing the required grading and drainage for approximately 4.11 miles of the West Virginia Turnpike including the relocation of approximately 0.85 miles of side roads plus the construction of the substructures for bridges known as Structures Nos. 2, 3, 4 and 4A. This work is located between a point near Princeton, at mile 0.0, and the vicinity of Gardner about mile 4.8, Mercer County, West Virginia, and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

The principal items of work include:

	Approximate Quantity
Clearing and Grubbing	25 acres
Excavation (all types) Including Borrow	950,000 c. y.
Concrete	1,150 c. y.
Reinforcing Steel	78,500 lbs.
Culvert Pipes and Underdrains	6,100 lin. ft.
Steel Piles	900 lin. ft.

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 5, West Virginia until 9:00 A. M., Eastern Standard Time, and thereafter at the House of Delegates Chamber, State Capitol, Charleston, West Virginia until 10:00 A. M. Eastern Standard Time, on June 11, 1953, at which time and place said proposals will be publicly opened and read.

WEST VIRGINIA TURNPIKE COMMISSION
D. H. Morton
Chairman

May 14, 1953

Bids: June 4, 1953

Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 4th day of JUNE 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects in Monroe County:

E. G. H. YOUNGMAN,
District Engineer, Barge Canal Terminal, Rochester, N. Y.

Contract No.	Type	Name of Highway and Miles	Deposit for Plans	Bid Deposit	Dept. Estimate
FACG. 53-11	Asp. Conc. Type 2A, R.R. & River Via-duct 1187'	Rochester City Inner Loop (Genesee River) Bridge and Approaches 0.36 Mile	$25	$170,000	$2,976,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds.

Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope.

Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

U. S. Government

St. Paul District, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids will be received at this office until 2:00 P.M., C.S.T., 16 June 1953, and then publicly opened for Channel Improvement on Marsh River, Minnesota.

OFFICIAL PROPOSALS

Bids: June 16, 1953

Electrical Work—Route 25A (1927) Sections 1 & 3, Route 58 (1953)

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

Electrical Work, Highway Lighting and Signs on Route 25A ((1927) Sections 1 & 3, Route 58 (1953), from D.L. & W.R.R. to High Street, in the City of Newark, Essex County. The principal items of construction are:

Estimated:
- 33 Lighting Standards
- 11,825 lin. ft. Primary Cable, 7500 volts
- 2 Neon Channel Letter Signs
- 3 Underdeck Lighting Systems
- 770 lin. ft. Directional Sign Cable
- 2 Meter Cabinets

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 16, 1953, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the Standard State Highway Specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:

STATE HIGHWAY DEPARTMENT
A. Lee Grover
Chief Clerk

Bids: June 16, 1953

Chain Link Fence— La Guardia Airport

PROPOSAL NO. 117
THE PORT OF NEW YORK AUTHORITY

Sealed proposals for furnishing all labor, materials and equipment to install approximately 570 feet of 6' chain link fence complete with one fantail and one 16' double swing gate at La Guardia Airport, Queens, New York, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111-8th Ave., New York 11, until 11:00 A.M. on the morning of Thursday, June 18, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, New York

Bids: June 23, 1953

Rehabilitation

THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
BUILDING NO. 106
CONTRACT PN-240.001

Sealed proposals for the rehabilitation of Building No. 106 at Port Newark will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. Tuesday, June 23, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 4, 1953

Bids: June 30, 1953

Tunnel Shield

THE PORT OF NEW YORK AUTHORITY
LINCOLN TUNNEL
THIRD TUBE
CONTRACT LT-160.041

Sealed proposals for the fabrication and delivery of the tunnel shield for the Third Tube of the Lincoln Tunnel will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. Tuesday, June 30, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 4, 1953

Bids: June 23, 1953

Headhouse Heating Rehabilitation

THE PORT OF NEW YORK AUTHORITY
HOBOKEN-PORT AUTHORITY PIERS
CONTRACT HP-110.010

Sealed proposals for heating rehabilitation for headhouses of the Hoboken-Port Authority Piers at Hoboken, New Jersey will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. Tuesday, June 23, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 4, 1953.

Bids: June 16, 1953.

Construction of Structures

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 A. M., Eastern Daylight Saving Time, the 16th day of June 1953, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburgh, Pennsylvania, and immediately publicly opened and read aloud for the following contract and/or contracts:

For the construction of structures and the grading, drainage, and paving of Turnpike Section 34-A, part of the Delaware River Extension of the Pennsylvania Turnpike in Lower Southampton and Bensalem Townships Bucks County, Commonwealth of Pennsylvania, this section being situated as follows:

Beginning at a point 4401 feet west of the center line of L. R. 326 locally known as the Somerton Pike at Turnpike Station 130+60 in Lower Southampton Township, Bucks County; thence in an easterly direction 18,736 feet to a point approximately 2596 feet east of the center line of L. R. 281, U. S. 1 East, at Turnpike Station 318+00 in Bensalem Township, Bucks County, a distance of approximately 3.55 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation	1,146,450 cu. yd.
Class II Excavation	27,580 cu. yd.
Class IIA Excavation	14,715 cu. yd.
Special Subgrade	311,950 sq. yd.
Reinforced Concrete Pavement	129,350 sq. yd.
Class A Concrete	4,133 cu. yd.
Class B Concrete	14,610 cu. yd.

For the construction of structures and the grading, drainage and paving of Turnpike Section 34-B, part of the Delaware River Extension of the Pennsylvania Turnpike in Bensalem Township, Bucks County, Commonwealth of Pennsylvania, this section being situated as follows:

Beginning at a point 2,596 feet east of the center line of L. R. 281, U. S. 1 East, at Turnpike Station 318+00 in Bensalem Township, Bucks County, thence in an easterly direction 16,218 feet to a point approximately 498 feet east of the center line of L. R. 150 Spur at Turnpike Station 480+18 in Bensalem Township, Bucks County; a distance of approximately 3.07 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation	459,450 cu. yd.
Class II Excavation	15,845 cu. yd.
Class IIA Excavation	1,536 cu. yd.
Special Subgrade	160,229 sq. yd.
Reinforced Concrete Pavement	87,864 sq yd.
Class A Concrete	2,642 cu. yd.
Class B Concrete	1,781 cu. yd.

Copies of plans, specifications and other contract documents including cross-sections, will be on file and open to public inspection at the offices of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on May 29, 1953. Copies of specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5.00) dollars per copy. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of fifty (50.00) dollars per set, for each section.

Plans and contract documents exclusive of cross-sections and specifications may be obtained from the Commission upon deposit of ten (10.00) dollars per set for each section, such deposits to be refunded in full to any actual bidder upon return of such documents in good condition within five (5) days after the date of the opening of the bids. Refund will be made for all plans, contract documents and cross-sections returned if the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents and cross-sections.

The Pennsylvania Turnpike Commission reserves the right to award each section as a separate contract or in a combined contract.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
DATED May 21, 1953

Read the Official
Proposal Columns of
ENGINEERING NEWS-RECORD
This Week and Every Week

OFFICIAL PROPOSALS

Bids: June 11, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provision for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 11th day of June 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. Nickerson, District Engineer, 353 Broadway, Albany, N. Y.				
Essex	FASS 53-5	Wilmington-Black Brook, Co. Rd. 12 Project S-219(1)	1.13	Bit. Mac. Type 2 Comp. I-Beam Br. 180'	$14,000 Plans $10	$250,000
Essex	FARC 53-50	Essex-Willsboro Pt. 2 S. H. 1641 Willsboro-Keeseville Pt. 2, S. H. 8238 Project F-407(7)	6.76	Asp. Conc. Ty. 1A, Opt.	13,000 Plans $10	245,000
		DISTRICT No. 2				
		L. Ketchum, District Engineer, 109 No. Genesee St., Utica, New York				
Herkimer	M.T. 53-10 S.T. 53-23 R.C. 53-47	New York State Thruway, Mohawk Section, Subd. 10B (East Schuyler-Fort Herkimer); Herkimer Interchange, 6 Secondary Crossroads; Mohawk-Jacksonburg-Little Falls, S. H. 8401; Herkimer Village, East Albany St., S. H. 5060	6.98 Thy. 3.85 Acc.	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide = 9.79 Mi. Asp. Conc. Ty. 1A, Opt. = 0.96 Mi. T. C. Bit. Mac. = 0.03 Mi. Misc. Work = 0.05 Mi. 2 Hy. Sepa. Comp. I-Beams 121.8' and 47.3' 1 Br. Comp. I-Beam and Girders 983.9' 2 RR Sepa. Comp. I-Beams 275.6' and 402.8'	$600,000 Plans $100	10,674,000
		DISTRICT No. 5				
		C. R. Waters, District Engineer, State Office Building, Buffalo, New York				
Niagara	FARC 53-52	Olcott-County Line, S. H. 9052, Project F-461(5), F-473(2)	12.55	Asp. Conc. Ty. 1A, Opt.	$18,000 Plans $10	334,000
		DISTRICT No. 7				
		Robert W. Sweet, District Engineer, 444 VanDuzee St., Watertown, New York				
Clinton	FARC 53-51	Mooers Village, S. H. 930, Mooers Forks-Champlain Pt. 1, S. H. 5102, Battleman Road, S. H. 1008, Projects F-576(3), F-1010(3)	3.96	Asp. Conc. Ty. 1A, Opt.	$9,000 Plans $10	156,000
		DISTRICT No. 8				
		J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, New York				
Rockland	H.T. 53-4 S.T. 53-22 R.C. 53-46	New York State Thruway, Hudson Section, Subd. 8 (Suffern-Nyack, Pt. 1); Oaklane; Hemion Rd.; Airmont Rd.; Suffern-Mt. Ivy, S. H. 1448	2.86 Thy. 0.58 Acc.	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide = 3.08 Mi. Asp. Conc. Ty. 1A, Opt. = 0.36 Mi. 1 Hy. Sep. Plate Girder 227.4' 1 Br. Comp. I-Beam 148.4' 2 Hy. Sepa. Comp. I-Beams 222.3' and 226.6'	$250,000 Plans $50	4,184,000
		DISTRICT No. 9				
		F. W. Donovan, District Engineer, 71 Frederick St., Binghamton 21F, New York				
Chenango & Otsego	R.C. 53-49	Various Highways in Chenango & Otsego Counties		Removal of 149 Trees	650 Plans $10	12,000
		DISTRICT No. 10				
		M. E. Goul, District Engineer, Montauk Highway at Little East Neck Rd., Babylon, Long Island, New York				
Suffolk	B.P. 53-52	West Jetty Shinnecock Inlet		Beach Protection (Stone Jetty and Light Tower)	5% of Bid Plans $10	525,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proopsal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: June 22, 1953

Erection of Two River Piers—for Bridge Connecting Packer Avenue-Gloucester City Bridge Known as Contract No. 1

DELAWARE RIVER PORT AUTHORITY
ADMINISTRATION BUILDING
CAMDEN, NEW JERSEY

Sealed bids will be received for the erection of two river piers, known as Contract No. 1 at the office of the Secretary of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey until 1:30 P. M. (Eastern Daylight Time) June 22, 1953 at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon a deposit of $10.00 which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified check in the sum of $230,000 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania or Camden, New Jersey, and must not be enclosed with the sealed bid. The Surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialmen's Bond in the sum of 100 percent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER
PORT AUTHORITY
JOSEPH K. COSTELLO, Secretary

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3970) will be received at Tracy, California until July 30, 1953, for furnishing labor and materials for: Monticello Dam, Solano Project, California. Location: on Putah Creek, California, approximately 30 miles west of Sacramento, California. Principal items are: Excavation 500,000 cu. yds; concrete 273,000 cu. yds; installing metalwork 755,000 pounds; and other work. Completion time 1000 days. For particulars, address Bureau of Reclamation, Tracy, California, or Building 53, Denver Federal Center, Denver, Colorado.

FRED G. AANDAHL, Assistant Secretary
for Water and Power Development
Department of the Interior

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3966) will be received at El Paso, Texas, until June 25, 1953, for furnishing labor and materials for installing overhead ground wires on existing 115-kilovolt transmission lines, Rio Grande Project, New Mexico-Texas. Location: Grant, Sierra, Lincoln, Otero, Dona Ana, Lune, and Socorro Counties, New Mexico. Principal items are: Furnishing and attaching bayonets, 4,100 bayonets; furnishing new and modifying existing structures, 88 structures; furnishing and stringing overhead ground wires, 360 miles of line; and other work. Completion time 455 days. For particulars, address Bureau of Reclamation, El Paso, Texas; or Building 53, Denver Federal Center, Denver, Colorado.

FRED G. AANDAHL, Assistant Secretary
for Water and Power Development
Department of the Interior

for

DIRECT CONTACT
with the
MOST ACTIVE BUYERS
throughout the field of
ENGINEERING
CONSTRUCTION—

Use the
Searchlight Section
ENGINEERING NEWS-RECORD

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY WANTED undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.50 a line an insertion.

INFORMATION:
BOX NUMBERS count as 1 line additional in undisplayed ads.
DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).
EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:
The advertising rate is $17.10 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York City Office 330 W. 42nd St., N. Y. 36, for June 18th issue closing June 8th

---

SUPERINTENDENTS
with substantial experience in
CONCRETE PIPE PRODUCTION

Nationally known producer of concrete pipe offers several exceptional permanent positions to experienced field men capable of supervising manufacture of concrete pressure and non pressure pipe throughout the United States. Also several openings for top-notch master mechanics preferably with previous experience on pipe machinery.

This reputable, well established Company is prepared to offer to the right men life-long secure positions, unparalleled opportunities for growth, personal recognition for individual accomplishments, generous company benefits in addition to high starting wages.

Only men eager and able to get results need apply.

P-7597, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS
URGENTLY NEEDED
OPENINGS FOR EXPERIENCED
MECHANICAL, ELECTRICAL, AND CIVIL ENGINEERS

Have Large Volume of Private and Defense Work. Salaries Commensurate With Ability.
WELL ESTABLISHED FIRM
HOME OFFICE — ROANOKE, VIRGINIA
BRANCH OFFICE — NORFOLK, VIRGINIA
Write Giving Full Information or Call Collect
23429 Roanoke
INTERVIEW WILL BE ARRANGED

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS & ENGINEERS
ROANOKE, VIRGINIA

ENGINEER

Drafting Checker—Mechanical or Civil Engineer with a minimum of five years experience in design and detailing preferably in the chemical industry. Position entails checking of structural and process designs.

Cost Estimating Engineer—Chemical Engineer with 5/10 years experience in Chemical Process equipment design including some cost estimating experience. Responsible position involving cost estimating and design of new chemical processes.

Apply Director of Personnel

J. T. BAKER CHEMICAL COMPANY
Phillipsburg, N. J.

ENGINEERS

Structural, mechanical, and electrical for work on hydro-electric power developments. Write giving full experience record and qualifications.

HARZA ENGINEERING COMPANY
400 West Madison Street Chicago, Illinois

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

OPPORTUNITY FOR Building Construction Estimator — General Contractor — Must be capable of handling complete estimate. Age group 28-42. Unlimited opportunity for advancement with fast growing company. Profit Sharing Retirement Plan and Group Insurance. Office location Northern New Jersey. P-8066, Engineering News-Record.

CONSTRUCTION SUPT., N.Y. School. Must be pusher. Good salary & future. Replies strictly confidential. Complete resume to P-7999, Engineering News-Record.

SANITARY ENGINEER—for design of water, industrial waste and sewerage facilities for established firm of Consulting Engineers, location Ohio. Must have degree and five years of actual experience. Permanent position intended. Salary open. Submit complete resume of education, experience, references, salary requirement and availability with first letter. P-7972, Engineering News-Record.

STRUCTURAL DESIGNER — reinforced concrete for established firm of Consulting Engineers, location Ohio. Minimum six years design experience, degree required. Must be P.E. or qualified. Permanent position intended. Salary open. Submit complete resume of education, experience, references, salary requirement, and availability with first letter. P-7973, Engineering News-Record.

(Continued on the opposite page)

BRIDGE DESIGNERS and DRAFTSMEN

For Consulting Engineer's office, Location Great Lakes region.

In reply state age, education, experience and rate of pay desired.

P-8084, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

DESIGN ENGINEER

The services of a design engineer, mechanical preferred, are required by large organization in Montreal, Canada. Must be thoroughly familiar with portable and permanent crushing plants, asphalt plants, ready-mix concrete plants and all types of road-building equipment, with eight to ten years' experience in this field and with engineering degree or equivalent. Permanent position if applicant qualified. Please give age, experience and references and state salary expected. All replies will be treated in strict confidence.

P-8016, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT

Superintendent and Foreman

Experienced in construction of sewers and water mains for work in or near Indianapolis, Indiana. This is a year round position for a capable and dependable superintendent. Please give experience, age and references.

P-7904, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED
GENERAL SUPERINTENDENT

One of the largest construction firms in the South is interested in securing the services of a full time General Superintendent to cover approximately three of the fourteen States in which this company operates. This man should have building construction background with experience in mass housing, office buildings, shopping centers, apartment buildings. To the right man we are willing to pay an excellent salary and bonus. Age between 35 and 45. Please send full particulars about background, personal habits, age and references to

P-7998, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED
CIVIL ENGINEERS
for Construction and Design
Salary $3900 to $6000
Write for Information

IOWA STATE HIGHWAY COMMISSION
Ames Iowa

STRUCTURAL STEEL CHIEF ENGINEER

Large tonnage fabricator & erector of structural steel for bidas offers openty for exp'd engineer, preferably now or previously engaged with steel detailing firm. Duties consist of sub-letting of steel details, coordinating with architects & engineers.

P-8061, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED

An Alert Mechanical Engineer with Some Knowledge of Electrical Engineering . . . Must Be a Good Calculator . . .

PHILIPS & DAVIES, INC.
KENTON, OHIO

SANITARY ENGINEERS

California offers positions with opportunity for professional advancement. Two years experience related to treatment and disposal of sewage and industrial waste, plus college engineering degree. Salary $395 to $481. Write today. Dept. PH-2, Recruitment Section, State Personnel Board, 1015 L St., Sacramento, Calif.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. *Forty-third year. Write today.*
WILSON *Engineering Corp.*
College House Offices—HARVARD SQUARE, CAMBRIDGE, MASS.

SALARIED POSITIONS $3,500—$35,000
We offer the original personal employment service (established 43 years.) Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars.
R. W. BIXBY, Inc., 272 Dun Bldg., Buffalo 2, N.Y.

POSITIONS VACANT
(Continued from opposite page)

WANTED SANITARY Engineer with experience in water supply and sewerage. Must be qualified for design, specification writing, supervision, and client contacts. This position is with long established consulting engineering organization in Middle Atlantic State, and offers opportunity for advancement and permanency. Preferable age 35 to 40. Write, giving complete personal history, experience and earnings record, and references. P-8089, Engineering News-Record.

POSITIONS WANTED

EXPERIENCED ARCHITECT'S Superintendent available now. Will go where the work is. Over 20 years Construction experience. PW-8063, Engineering News-Record.

CIVIL ENGINEERING, Masters' or Ph.D. degree desired. Rank and salary, Instruction on up in higher grade depending on experience. Teach mechanics, fluid mechanics, testing materials. All laboratories new. Interesting opportunity to develop latest new fluid machinics laboratory. PW-8081, Engineering News-Record.

SUPERINTENDENT: FOR perm. position with opp. adv. 13 yrs. Residential, Commercial, Industrial. C.E. training. Spec. Concrete. Relocate anywhere. Min. Sal. $7,300. PW-8037, Engineering News-Record.

STRUCTURAL ENGINEER—10 years design experience heavy industrial structures, commercial and Institutional buildings, bridges, aircraft, teaching. M.S. degree. Reg. Prof. Engr. New York. Will relocate in Midwest for challenging opportunity in desirable atmosphere. PW-8039, Engineering News-Record.

BUILDING ESTIMATOR and purchasing agent with administrative experience. Will locate anywhere in the U. S. PW-8041, Engineering News-Record.

CONSTRUCTION EXECUTIVE Lic. Engr. NY qualified journeyman 5 trades. Completely qualified in take-off, cost analysis, bidding designing, advanced preparation, with field and office supervision on Bridges, industrial and general construction. PW-7894, Engineering News-Record.

ENERGETIC YOUNG Civil Engineer with excellent background and experience record is seeking a position as Chief Engineer on a major project involving both design and construction. Prefer foreign assignment. PW-7869, Engineering News-Record.

CIVIL ENGINEER, Member, A.S.C.E. and A.R.E.A., 64 years graduate of Prague I. of T., recent immigrant; 40 years of consulting, design and contracting practice in general civil, hydraulics, railroading in Europe and South America, seeks position in Nebraska and neighboring states. Speaks good English PW-8007, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT — all types of Industrial and Commercial construction. Graduate Civil Engineer. 39 years old. 18 years construction experience. Presently construction superintendent Steam Electric Power Plant. Available July. PW-7974, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT and Engineer desires work in New England. Experienced industrial plants, housing, heavy construction, bridge and marine work, skilled estimator,. PW-7967, Engineering News-Record.

Don't forget
THE BOX NUMBER . . .
when answering the classified advertisements in this magazine. It's our only means of identifying the advertisement you are answering.

SUPERINTENDENTS AND PROJECT MANAGERS TRAINING COURSE
All instructions by mail. Send today for sample lesson and complete details
Geo. E. Deatherage & Son, Dept. 101
411 S. 5th Ave. Lake Worth, Florida

POSITIONS WANTED

PRECAST—PRESTRESSED—Concrete. Executive Engineer seeks new association. Development, design, construction, sales of new products. Wide experience with construction industry, its problems, materials and methods. Broad civil engineering background, licensed in several states. PW-8083, Engineering News-Record.

PART TIME WORK WANTED

STRUCTURAL SQUAD, designers & draftsmen, available for assignments. Experienced steel & concrete; public & indust. bldg. super. & fdm. PTWW-7906, Engineering News-Record.

WORK WANTED

PRELIMINARY INVESTIGATIONS, studies reports, field engineering, and design for highways, railroads, industrial development in foreign countries. Fee basis or contract. WW-7870, Engineering News-Record.

STRUCTURAL SHOP Details. Made and Checked. Use our 30 years experience. WW-8072, Engineering News-Record.

FOR SALE

For Sale—Large surplus concrete curing compound, form-oil and wood preservative in 55-gal. drums. Sample drum at quantity price. FS-7966, Engineering News-Record.

WANTED

ANYTHING within reason that is wanted in the field served by Engineering News-Record can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

FOR SALE
SAND and GRAVEL BUSINESS
On Mississippi River serving community of 40,000. Within 200 miles of Chicago on main-line railroads. Thirty-seven years of profitable operation. Can be financed.
BO-8023, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

• WANTED •
INDUSTRIAL PLANTS
Will arrange thru purchase of (1) Capital stock, (2) Assets, (3) Machinery and equipment, whole or in part—Personnel usually retained, strict confidence. **Box 1351**, Church St. Sta., New York 8, N. Y.

WANTED
(1) Lorain Crane Boom to fit late model 820—50' Base Boom and (1) 20' Insert.
Lycoming Construction Co., Inc.
127 Susquehanna Street Williamsport, Pa.

WANTED
25 Ton Truck Crane
30 Ton Diesel Locomotive Crane
45 Ton Diesel Electric Locomotive
B. M. WEISS COMPANY
Girard Trust Company Bldg. Philadelphia 2, Pa.

MECHANICAL FIELD SUPERVISORS
Must be qualified to supervise Mechanical and Instrumentation installations as Engineer Representative at Atomic Energy Commission project near Portsmouth, Ohio.
Steady employment on long range work program, vacation benefits, hospitalization and group life benefits available. Applicants must be citizens of United States.
Detailed work record showing construction experience should be forwarded to:
GIFFELS & VALLET, INC.
Engineers
P. O. Box 318 Portsmouth, Ohio

YOUNG ENGINEERS WANTED
Southwestern railroad seeking qualified young engineers for positions in Maintenance of Way, construction, general office and industrial work. Inquiries invited from current graduates, as well as men now employed as instrumentmen, draftsmen, estimators, supervisor trainees and junior men in all of these positions. Persons interested in employment opportunities with this line in Texas and Louisiana should forward letter of inquiry, giving age, marital status, education, technical training, field of preference, and experience, accompanied by recent photograph or snapshot and sample of drafting work, care of this publication. All inquiries will be kept confidential.
P-8056, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED
PROJECT MANAGER SUPERINTENDENTS
with extensive experience in hospital and institutional construction for work in Eastern United States. Good salary and incentive bonus. Forward resume of experience and references to:
P-8082, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ESTIMATORS
Young engineers capable of mechanical estimating for construction of refineries, steam power and similar industrial projects. Must have some field experience. Considerable weight given to ambition, intelligence and interest in estimating and cost analysis.
BECHTEL CORPORATION
220 Bush Street
San Francisco, California

Establishing a new HIGH in rebuilt machinery . . .

Our 3 decades of diversified experience in rebuilding heavy construction equipment, quarry equipment and trucks, can be of invaluable help to you in rebuilding your equipment.

L. B. Smith's proved ability to do the job right . . . the way you want it done . . . can provide important savings in time and money.

If you are undecided what to do about a piece of used equipment, pay us a visit . . . see what we are doing for other customers . . . and to our own equipment. We cordially invite you.

L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 2 NO. 2

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Gardner-Denver 365 cu. ft. diesel.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

2036 Cedarapids AAA primary unit on rubber, diesel power. Rebuilt.
1036/2418 Cedarapids Jr. Tandem unit on rubber.
Cedarapids Rock-It plant w/2025 jaw, 3033 hammermill. New.
4033 Cedarapids Model 6C plant. New.
2020 Cedarapids double impeller. New condition.
4024 Cedarapids roll. Rebuilt.
3018 Cedarapids roll. Rebuilt.
1036 Cedarapids jaw. Rebuilt.
10x7 Allis Chalmers lake type jaw crusher. Rebuilt.
B-3 Jeffrey swing hammer pulverizer. Rebuilt.
60" dia. x 14' long Traylor revolving screen. Rebuilt.
24" Wemco single pitch sand screw. New condition.
15 cu. yd. Cedarapids sand drag. New.
16" x 90' bucket elevator.
60-ton, 2-compartment, 8' x 18' storage bin w/clam gates.
100-ton, 2 compartment, 13'x23' storage bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.
24" Dia. x 30" face magnetic pulley.

TRUCKS—TRAILERS

27FD Euclid rear dumps.
1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain 77, 1½-yd. diesel.
Lorain 75B, 1¼-yd. diesel.
Lorain 57, 1¼ yd. diesel, rebuilt.
Lorain L-50-I, 1-yd. diesel.
Lorain MC-2 Moto-Crane
Lorain 40 truck crane on Mack 3-axle truck.
Link Belt LS85 diesel combination.
Unit 514, ½-yd. gasoline crawler shovel, rebuilt.
Lorain 30A, ½-yd. gas combination.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 638 for ¾-yd. to 1-yd. crane.
Lorain 77 crane boom, 45'.

BACKHOE BUCKETS & ATTACHMENTS

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #6105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #8101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

1—45" Ohio lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8800, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2280.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
Cleveland formgrader, new 1944 rebuilt.
Corr formgrader, new 1944, rebuilt.

TRUCK MIXERS

3-yd. Challenge high discharge mixer on International chassis.

TRACTORS

TD-24 International with Bucyrus-Erie angle-blade.
TD9 International diesel with 1 yd. Loadover.
Model CR Tournapull w/18-yd. Model E18 Tournarocker, rebuilt.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching machine 18" to 24" cutting width, 7' depth.

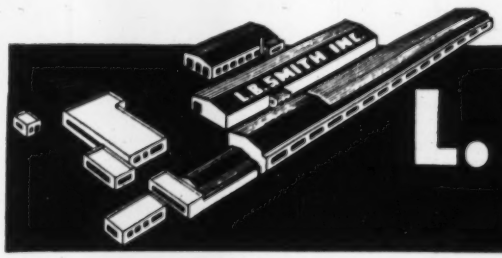
PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3000 GPM at 120' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

GASOLINE AND DIESEL ENGINES

Caterpillar D-13000, rebuilt.
Murphy ME-6, & ME-48, rebuilt.
Caterpillar D8800.

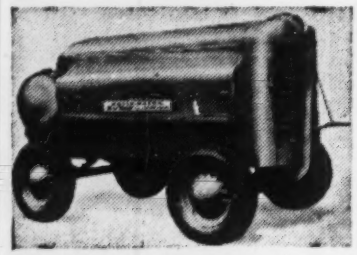
***Phone* HARRISBURG, PA. 7-3431**



L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

CAN'T BEAT THIS
TEN MORE PORTABLE COMPRESSORS
AT YOUR PRICE

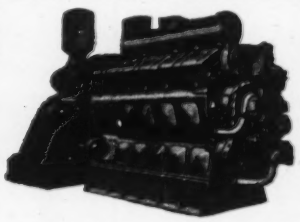


60 CFM INGERSOLL (Gas) Skids—$675
70 CFM SMITH (Gas) 2P—$1500
105 CFM WORTHINGTON (Gas) 4P—$1800
105 CFM INGERSOLL (Oil) 2P—$1900
105 CFM INGERSOLL (Gas) 4P—$1900
160 CFM WORTHINGTON (Gas) 4P—$2300
210 CFM WORTHINGTON (Gas) 4P—$2400
315 CFM WORTHINGTON (Gas) 4P—$2700
315 CFM WORTHINGTON (Diesel) 4P—$3300
500 CFM WORTHINGTON (Diesel) 4P—$7000

GUARANTEED PERFORMANCE. INSPECT THEM — SEE THEM RUN. RENT ONE FOR 60 DAYS. APPLY ON RENTAL PURCHASE.

AMERICAN AIR COMPRESSOR CO.
Dell Ave. & 48th St. North Bergen, N. J.
UNion 5-4848

DIESEL POWER



IMMEDIATE SHIPMENT
• PURCHASE OR RENTAL
UNIT CAPACITIES—10 TO 2475 KVA
A.C.—50 AND 60 CYCLES
• ALSO D.C. UNITS

A PARTIAL LISTING OF OUR INVENTORY

KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1980	Nordberg	TS-217	2800	225	320	Enterprise	DSG-6	560	450
1500	Fairbanks Morse	33E16	2000	300	300	General Motors	8-268A	450	1200
1136	Fairbanks Morse	38D	1600	720	250	Fairbanks Morse	37-E	375	360
1100	General Motors	16-278A	1600	720	200	General Motors	8-268A	350	900
750	General Motors	12-567	1080	720	150	Worthington	CC-4	225	450
500	Baldwin	VO-8	750	514	150	Buckeye	80	240	600
500	General Motors	8-278A	750	720	100	Worthington	BB-5	150	600
500	General Motors	8-567	720	720	100	General Motors	3-268A	150	1200
400	Ingersoll-Rand	8-8	600	720	60	General Motors	6-71	90	1200
350	Baldwin	VO-6	510	450	30	Internat'l Harvester	UD-14	45	1200

A. G. SCHOONMAKER COMPANY, INC.
ENGINE DIVISION, 50 CHURCH ST., NEW YORK 7, N. Y.

Locomotive Cranes
Crawler Cranes
Gantry Cranes
41-B, 50-B, 30-B, DE
Steam Cranes
Locomotives
Railroad Cars
Pumperete

Dredges, Hydraulic
Boilers
Generators
Slackline
Tugs & Boats
Derricks
Hoists
Bins

STONE THE CRANE MAN
1132 Prudential Bldg. Buffalo 2, N. Y.

FOR SALE
Rent or Rental Purchase:
Approximately
50 WELDING MACHINES
Gas Engine & Electric Motor Driven. Used. Also welding cable & Nelson Stud Welding Units.
ES-7615, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SHOVELS—CRANES—DRAGLINES
Northwest 40D Shovel-Dragline. New 1948.
Northwest 98 Crane-Drag., Bm. 95'. New 1948.
Northwest 80-D Shovel Crane. Diesel.
Buc-Erie 51-B Shovel. Practically new cond.
Northwest 6, 1¼ yd. Diesel Shovel.
P&H 955-ALC. Diesel Crane, 130' boom, 1951.
Lima Model 1201 Diesel Shover 3½ yds.
Lima Mod. 34 Paymaster Shovel Drag. Diesel.
Buc. Erie 54-B Shovel-Dragline. Excellent.
Buc-Erie 120-B Electric Shovel. 5 yds.
Lorain L820 Shovel-Crane-Drag. 2 yds.
Manitowac Mod 3500 Diesel Shovel.
Lorain Mod. Mc-414 Moto-Crane 70 ft. Boom.
Lorain Mod. Mc-824, 45 Tons cap., New 1952.

TRACTORS—PAYLOADERS
3 Cat. D-8 Tractors, 2U series, Rebuilt.
4 Cat. D7 and 3 Cat. D6. Late type, rebuilt.
Hough Payloaders Models HLA, HFH, HM, HA.

CONCRETE PLANTS—BINS & SILOS
B-K 4 comp. 300 tons agg. bin with 54-B weight batcher bucket elevator, conveyor & hopper.
Large plant 212 yds. 6 compt., agg. and cement elevators, 56-B Mixer. Excellent.
Large plant 400 yds., 5 compt. with 2 yd. Mixers.
Cement bin 400 bbls. with batcher. NEW.
Agg. bin. 100 tons 3 cpts. 2 yd. weighbatcher, NEW.

ASPHALT PLANTS
Barber Greene Model 842 Utility Plant.
McCarter Iron Works Complete 3000# pug mill.
Pioneer Model 101, complete, new 1948. Excellent.
Monotrol-Overmander. 25 tons per hr. capacity.
Simplicity Model S-100. Diesel powered.
Hetherington-Berner Asphalt Moto-Paver.

STIFF LEG AND GUY DERRICKS
Steel Stiff leg Derrick 100 Ton 100' Boom.
Steel Stiff leg Derrick 25 Ton 80' Boom.
Steel stiff leg derrick, 30 tons 100 ft. boom.
Steel Guy derrick 20 tons, 122' mast, 114' bm.
Guy-Erectors 110' Mast 100' BM., 35 Tons.

CONCRETE MIXERS AND PAVERS
2—Koehring Tilting Mixers, 4 yds. Complete.
Smith 56B Tilting Mixer. 2 yds.
Jaeger BP-5 Asphalt Paver & attachments.
2 Ransome 34-E Dual Drum Pavers Diesel.
Koehring 34 E Dual Drum Paver. Diesel.

ROAD FORMS
B-K & Heltzel 8000', 9"x9", 5000', 8"x8".

RICHARD P. WALSH CO.
30 Church St. New York 7, N. Y.
Cable RICHWALSH Cortlandt 7-0723-4

FOR SALE or RENT

1½ yd Koehring 605 Diesel Crane 140' bm. GM Diesel. Long Tracks.
30 ton Industrial Brownhoist Gas Locomotive Crane. 70' bm.
200 HP 3D Elec. Hoist and Swinger.
65 ton G.E. Diesel Elec. Locomotive.
45 ton G.E. Diesel Elec. Locomotive.
25 ton American Stiffleg Derrick.
500 CFM G-D Portable Diesel Compr.
750 CFM G-D Compr. 125 HP Motor.
130 HP Christian 2D Diesel Hoist.
60 ton Clyde Elec. Revolver or Gantry.

MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St. St. Louis 1, Mo.

Pile Driving Equipment

Vulcan and McKiernan-Terry
Steam Pile Hammers and Extractors
Pile Driving Accessories
Drop Pile Hammers and Caps
Steel Sheet Piling

CONTRACTORS MACHINERY Co.
2637 Southwest Blvd. Kansas City 8, Mo.
Phone Valentine 4740

LOCOMOTIVES
1—Plymouth—8 Ton 30" Ga.—Gas.
1—Brookville 10T-30" Ga. Diesel—Like New.
1—Vulcan 14 Ton—30" Ga., Diesel.
3—Whitcomb—15 Ton—36" Ga.—Diesel.
2—Plymouth 8 Ton Gas. Std. Ga.
1—Whitcomb 30 Ton Std. Ga. Diesel.
1—G.E. 80 Ton Diesel-Elec.
3—G.E. 100 Ton Diesels-Elec.
Brookville 8 Ton 36" Ga. Gas.
Brookville 6 Ton—36" Ga. Diesel.

3—HOPPER CARS—50 TON. EXCELLENT. STD. GA.

2—Conway Mod. 75 Muckers. ±256 & ±305. Bargains.
Southwark 500 Ton Hydraulic Press—High-Speed—Like New.
Southwark 100 Ton Hydraulic Press.
Mundy 2-Drum Elec. Hoist—300 H.P. Like New.
Bridgeford Axle Laths. 10—50 Ton Hopper Cars.
"Burro" Model 20 Gas Crane.

R. H. BOYER
2005-13 W. Bellevue St. Phila. 40, Pa.
Phone Sasamore 2-7132

FOR SALE
MANITOWOC DRAGLINES Model 4500

FOR SALE or RENT

Manitowoc Model 3500 Liftcrane. Clamshell, Dragline combinations. 2½ cu. yds., 60 ton capacity.

Reply to

Clemens Construction Co.
P. O. Box No. 266, West New York, N. J.

FOR SALE
CONTRACTOR SELLING OUT
ALL EQUIPMENT

Koehring Shovel 1½ Yd. Cat Diesel New 1951 $35,000.00
Marion Shovel ⅝ Yard Crane & Backhoe G. M. Diesel extra large tracks new 1948.....$17,000.00
Lorain Shovel ⅝ Yd. and Backhoe Cat Diesel new 1950.....$17,000.00
Unit ⅛ Yard Crane new 1951.....$7,000.00
2—Unit ⅛ Yard Backhoes, Diesel.....$8,500.00
H. D. 20 with Pusher block 17 Yard La Plante Choate wagon, Used 400 hrs.....$28,000.00
H. D. 19, new motor, new tracks, angleblade $10,000.00
3 Garwood Carryalls 11 Yards.....$3,500.00
H. D. 9 Angleblade. Used 4 months.....$9,000.00
5 H. D. 14 Bulldozers with blades $3,500.00 to $6,500.00
Cat D. 6 Angleblade new 1951.....$7,500.00
Grader Cat #12. Like new.....$7,500.00
3 Terra Corbras, new motors. 80 pct. rubber. $6,500.00

Griffin Well Point System
Also Trucks—Concrete Mixer—Fordson Tractor
Contractor Disposing Surplus Equipment

FELIX CLAUSS & SONS
4400 "D" Street Philadelphia 20, Penna.
Phone: Michigan 4-7963

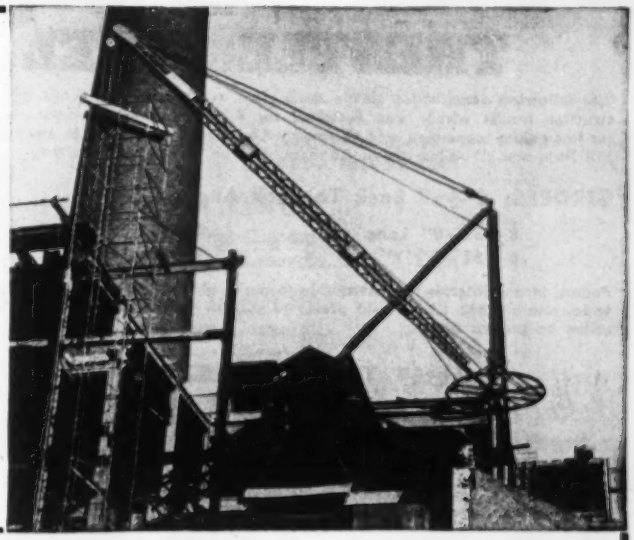
WIRE ROPE

WORLD'S LARGEST STOCK
Immediate Delivery
PRICED BELOW REGULAR MILL PRICES
50,000'— ⅝" 6x19 HC Plow & Impro. Plow
100,000'— ¾" 6x19 HC Plow & Impro. Plow
70,000'— ⅞" 6x19 HC Plow & Impro. Plow
40,000'— 1" 6x19 HC Plow & Impro. Plow
30,000'— 1⅛" 6x19 HC Plow & Impro. Plow
10,000'— 1¼" 6x19 HC Plow & Impro. Plow
50,000'— 1⅜" 6x19 HC Plow & Impro. Plow
500,000' OTHER SIZES IN STOCK
ALSO CARLOADS OF TURNBUCKLE, SHACKLES & WIRE ROPE CLIPS

WIRE ROPE TRADING CO.
562 TENTH AVE. NEW YORK 36, N.Y.
LONGACRE 5-3050-1-2

The Busy Contractor Knows That ECA Equipment is Dependable!

The United Engineers & Constructors, Inc., well-known national firm, have purchased one and rented another American Tubular Tower with hoist to use on a huge industrial job in Chicago's southwestern area.



AIR RECEIVERS

3' dia. 7'6" high, 245# National Board Receivers with base.

CRANES, CRAWLER

No. 3 Northwest Magnet Crane, Ser. 4603, generator and complete for magnet work but without magnet.

¾ yd. P&H Mdl. 255-A Crane, Ser. 5750, 6 cyl. Wauk. gas eng., 35' boom.

¾ yd. LS-85 Link Belt Crane, year 1946, Cat. D-4600 Diesel eng., 40' boom.

1¼ yd. Bucyrus Erie Mdl. 33-B, Ser. 16502, 8 cyl. "V" type LeRoi gas eng. (eng. new 1948). 50' boom.

Mdl. 501 Koehring Crane #1071, 60-70-80' boom, 18' jib, Mdl. K Wisc. gas eng. Cap. 40,000# @ 12'. Shpg. wt. 97,200#.

1½ yd. Mdl. 77 Lorain #9163, D13000 Diesel eng., 45' to 85' boom, 20' jib. Wt. 80,000#.

1½ yd. Mdl. K360 Link Belt Crane, Ser. 1959, powered by 6 cyl. Cat. D13000 Diesel, hi gantry, 80' boom, with fairleads and Rudomatic tagline.

1½ yd. Lorain Mdl. 78 Crane, Ser. 10973 power Cat. D13000 Diesel, hi gantry, 100' boom, 15' jib with fairleads.

1½ yd. P&H 655-A Diesel Crane or Dragline, Ser. 6426, 75' boom, 20' jib. Cat. D-13000 Diesel eng., hi gantry. Wt. 82,900#. Rental only.

1¾ yd. Link Belt Mdl. 370 Diesel Crane or Dragline, 90' boom, hi gantry, Cat. D13000 Diesel eng., long & wide pads, rental only.

2½ yd. P&H Mdl. 955-LC, Ser. 5309, Cat. D-17000 Diesel eng., 100' boom, 1½ KW light plant, tagline. Operate either from cab or remote control 32' hi tower. Ideal for levee, pit, coal dock work, etc. Excel. condition.

SPECIAL
THIS MONTH
AT OUR PHILADELPHIA PLANT

AIR COMPRESSORS
Portable, 2-Stage

500 cu ft. Ing. Rand #40-T-29621, Mdl. K-500, 100# pressure, 6 cyl. Wauk.-Hesselman Diesel eng. #674854, Mdl. 6-WAKH, mtd. 4 pneu. tires. Wt. 10,000#. $8,000.00.

GUY DERRICKS

20 ton American Terry Steel Erectors Guy Derricks, 110' mast, 100' boom, ball bearing foot blocks.

HOISTS, GASOLINE

Single drum Mdl. 75 American, with Minneapolis Moline gas eng. Cap. 7500# @ 155 FPM.

80 HP Single drum Mundy #15715, silent chain drive, side lever operation. Cap. 9000# @ 225 FPM. Wt. 9450#.

PUMPCRETE

Mdl. 190 Rex Single Pumpcrete #CP114, main power plant 4 cyl. Wauk. gas eng., with remixing hopper. Power 4 cyl. LeRoi gas eng., recommended pumping distance 1000' with 7" pipe. Max. vertical lift 110', cap. 23-30 yds. per hour. Reduced to $5,000.00.

TANDEM ROLLERS

8 ton Tandem Buffalo-Springfield Rollers, Mdl. VT-21, sprinklers & scrapers for each roll, power steer, 4 cyl. Wauk. gas eng. Completely rebuilt, immed. shipment.

Please Write, Wire or Phone

ECA CLIFTON HEIGHTS, PA.
Box J-608, Sub. of Phila.
MAdison 6-22[illegible]

75 KW AC DIESEL GENERATOR

75 KW AC Diesel Generator, 220/440/60/3, Cat. D-13000 Diesel eng. Generator completely rewound. A Real Buy.

LOCOMOTIVES

24" ga. 6 ton Whitcomb locomotive, Type MO, #11438, Wisc. VAU gas eng., starter, battery, generator.

Std. ga. 15 ton Vulcan, Ser. 3903, 6 cyl. LeRoi Mdl. JMS gas eng. Operating condition. Only $1,800.00.

Std. ga. 16 ton Plymouth, Ser. 3819, JH6 Buda gas engine.

PILE HAMMERS & EXTRACTORS

#2 Vulcan #500, std. base, steel ram point. Wt. #6700.

McKiernan Terry Nos. 9B2, #7, #6, #3, #2, #1.

#800A Vulcan Extractor. Wt. 5400#.

#E4 McKiernan Terry Extractor. Wt. 4400#.

TRENCHERS, CRAWLER MTD.

Buckeye Mdl. 12 Wheel Type, 1948 unit, 6 cyl. Buda gas eng., dig 24" wide, 5½' deep.

Badger Mdl. 203 Ladder Type, 1947 unit, Mpls-Moline gas eng. 20' boom and 12' boom. Dig 6'6" with short boom & 9'6" with long boom.

WAGON DRILL

Worthington "Rockmaster" Wagon Drill, 3 steel wheels. Good buy at $900.00.

All this equipment is owned by us and may be inspected at one of our show rooms.

WE BUY • REBUILD • SELL AND RENT — *PARTIAL LIST ONLY • SEND FOR OUR STOCK LIST*

CLIFTON HEIGHTS, PA.
Box J-608, Sub. of Phila.
MAdison 6-2200

PITTSBURGH 30, PA.
Box J-933
FEderal 1-2000

ECA
EQUIPMENT CORPORATION
OF [illegible]

CHICAGO 12, ILL.
1155 S. Washtenaw Ave.
NEvada 8-2400

NEW YORK 7, N. Y.
30-J Church St.
WOrth 2-0036

TRESTLE STEEL

The following construction trestle deck steel, reclaimed from Clark Hill Dam construction trestle which was designed for R-20 American Revolver, is available for immediate inspection and shipment. All in good condition. In storage at Clark Hill Dam site, 25 miles above Augusta, Ga., on C. & W. C. Railway.

GIRDERS: 6'-½" Back To Back Angles

8—35'–0" Long	2—35'–11" Long
6—51'–6" "	2—52'–37/16" "

Beams, struts, laterals, etc. available to make nine (9) complete deck spans 32'-0" wide, totaling 382 L.F. Would prefer to sell as complete spans but will consider offers on broken spans.

ALLSTATES CONSTRUCTORS, INC.
P. O. Box 658 Augusta, Ga.
Phone—County 5300, Ex. 27
H. O. Locher, Jr.

LOW COST INSTALLATION AND OPERATION

CABLEWAYS
IMMEDIATE SHIPMENT
ELECTRIC, STEAM or DIESEL
CAPACITY 3 to 20 TONS
SELL, RENT or BUY
FOR DAMS, BRIDGES, BREAKWATERS, FILTRATION AND SEWERAGE PLANTS
FOR SPEED, ECONOMY, EFFICIENCY, FLOOD SAFETY, LABOR REDUCTION
AMBURSEN DAM CO. INC.
295 MADISON AVE. NEW YORK

RAILS-TIES
TRACK ACCESSORIES

FOR IMMEDIATE DELIVERY

RAILS

NEW—RELAY

300 TONS	80#ASCE	NEW
500 TONS	90#ASCE	NEW
1600 TONS	90#ASCE	RELAY
400 TONS	90#ARA-B	RELAY
700 TONS	100#ARA-A	RELAY
900 TONS	110#AREA	RELAY

80# & 90# RAILS 30' to 33' with Angle Bars
100# & 110# RAILS 33' to 39' with Angle Bars

New Light Rails and Turnouts Available for Prompt Delivery

MORRISON
RAILWAY SUPPLY CORP.
814 Rand Bldg. Buffalo 3, N. Y.
Mohawk 5820

FOR SALE

New and Used material—Immediate delivery from stock Angles, Channels, I and WF Beams, especially for Contractors needs

H BEAMS PILE SECTIONS
28 PIECES 12" BPS 53 LB. 60/70 FT.
Phone or Wire your steel requirements

We are also interested in purchasing your surplus material.
We assure you our prices will be the best obtainable.

HY DRACHMAN STEEL CORP.

Warehouse
14-23 34th Avenue
Astoria, New York
AStoria 8-4484 8-8023

Sales Office
563 East Tremont Ave.
New York City, N. Y.
CYpress 9-5440

FOR SALE

DIESEL ELECTRIC LOCOMOTIVES

STANDARD GAUGE

1—25 ton—1947—150 HP
1—44 ton—1943—380 HP
1—70 ton—1948—600 HP
1—80 ton—1941—500 HP
2—100 ton—1943—660 HP

EXCELLENT CONDITION

Frank M. Judge & Co., Inc.
7010 Empire State Bldg. N. Y.

LIMA 802 SHOVEL
Good Condition

34' boom, 27' sticks.
1-¾ Yd. Dipper
Caterpillar D-17000 Motor
Price $35,000.00

ANDERSON EQUIPMENT CO.
Box 1737 Pittsburgh 30, Pennsylvania

RAILS NEW AND RELAYING
TRACK ACCESSORIES
"FASTER FROM FOSTER"

Try us for all of your rail needs. We're buying daily — replenishing our stocks in all sizes. Complete stocks of All Track Tools & Accessories.

PIPE ✔ PILING ✔ WIRE ROPE & SLINGS
L.B. FOSTER CO.
Pittsburgh 30, Pa. New York 7, N.Y.
Chicago 4, Ill. Houston 2, Tex.

LOCOMOTIVES

100 TON AMER. DIESEL ELEC.
100 TON BALDWIN DIESEL ELEC.
65 TON G.E. DIESEL ELEC.
20 TON WHITCOMB GAS
10 TON DAVENPORT GAS

DARIEN, 60 E. 42nd St., N. Y. 17, N. Y.

LONG ISLAND STRUCTURAL STEEL CO. INC.
400-410 TIFFANY STREET, BRONX 59, N. Y.
KI Ipatrick 2-5300
New and Used
BEAMS — ANGLES — CHANNELS — PLATES
Bought and Sold
SPECIALIZING TO CONTRACTORS NEEDS

IMMEDIATE SHIPMENT

RAILS NEW RELAYING
SWITCH MATERIAL
ALL TRACK ACCESSORIES

MIDWEST STEEL CORPORATION
503 DRYDEN ST. CHARLESTON 21, W. VA.

DIESEL PARTS General Motors Series 71

Price list on request.

RODER-BLACKBURN
INTERNATIONAL CORPORATION
Dept. ENR 4, 149 Broadway, New York 6, N. Y.

---

1 Yd. SHOVEL ATTACHMENT
Complete
For Model 600 P & H

LOUIS ARGENIO, INC.
381 Broadway Newburgh, N. Y.
Phone Newburgh 5102

RAILROAD Cross and Switch **TIES**
Promptly from adequate stocks
NEW and USED *(as available)*

GILLIS & COMPANY
29 East Madison St. Chicago 2

FOR SALE

1—Shovel Front for Lima 604 complete with 1½ cubic yard ESCO bucket. Used one month. $5800.00

CLEVELAND CONTRACTORS EQUIPMENT CO.
12500 Berea Rd. Cleveland 11, Ohio

NEW—RAILS—Relayers

All sizes and weights. Also frogs, switches, spikes, bolts, tie plates, contractors' and mine equipment carried in stock.

M. K. FRANK
480 Lexington Ave. Park Bldg.
New York, N. Y. Pittsburgh, Pa.
Reno, Nevada Carnegie, Pa.

CARLYLE
INDUSTRIAL RUBBER PRODUCTS FOR EVERY PURPOSE

IMMEDIATE DELIVERY OF CONVEYOR, ELEVATOR AND TRANSMISSION BELTING — PIPE, WATER, SUCTION, AIR, STEAM AND WELDING HOSE

WHY WAIT

We have 8 to 48

RUBBER CONVEYOR BELTING

TOUGH COVERS—Heavy duty, specially compounded abrasive resistant rubber covers having high tensile strength. Thoroughly capable of withstanding the abrasive action of bulk materials. Properly vulcanized to the carcass to assure utmost performance, economically.

STRONG CARCASS — Constructed of finest quality 28 and 32 ounce tough cotton duck, properly treated and impregnated to avoid mildew from moisture and atmospheric conditions. Each ply thoroughly embedded in rubber to prevent ply separation.

FLEXIBILITY — Careful attention has been given in the construction of all belts to have the proper flexibility assuring the following desirable features; troughs easily, runs true on all idlers, gouge resistant, excellent for long and short hauls and slope installations.

Avoid delays in your production schedules!

We carry in stock for your immediate requirements, Conveyor Belting in widths from 8 inches to 48 inches.

Width	Ply	Thickness Top Cover	Thickness Bottom Cover	Type of Duck Carcass
8"	4	1/16"	1/32"	28 Oz.
10"	4	1/16"	1/32"	28 Oz.
12"	4	1/16"	1/32"	28 Oz.
14"	4	1/16"	1/32"	28 Oz.
16"	4	1/8"	1/32"	28 Oz.
18"	4	1/8"	1/32"	28 Oz.
20"	4	1/8"	1/32"	28 Oz.
20"	5	1/8"	1/32"	28 Oz.
24"	4	1/8"	1/32"	28 Oz.
24"	5	1/8"	1/32"	28 Oz.
26"	5	1/8"	1/32"	28 Oz.
30"	4	1/8"	1/16"	32 Oz.
30"	5	1/8"	1/16"	32 Oz.
30"	6	1/8"	1/16"	32 Oz.
36"	6	1/8"	1/16"	32 Oz.
42"	5	1/8"	1/16"	32 Oz.
48"	5	1/8"	1/16"	32 Oz.
48"	8	1/8"	1/16"	32 Oz.

INQUIRE FOR SIZES NOT LISTED ELEVATOR TRANSMISSION & V-BELTING ALSO IN STOCK

All our belting made by the leading belting manufacturers.

Write for Free Booklet on Installation, Care & Maintenance of Conveyor Belting.

SEND US YOUR INQUIRIES FOR OTHER RUBBER PRODUCTS.

CARLYLE RUBBER CO., Inc.
62-66 Park Place, New York 7, N. Y.
Phone Digby 9-3810

FOR SALE

50—1½ yard Blaw Knox, R-46, Bottom Dump Concrete Buckets.

Subject to prior sale

FRAZIER-DAVIS CONSTRUCTION CO.
1319 Macklind Avenue, St. Louis, Mo.
STerling 1950
Box 153 Grahamsville, New York
Grahamsville 2861

FOR RENT

TRUCK CRANES
Twenty—10-ton to 20-ton Capacity
Sectional Boom Lengths to 130 Feet

LIMA—P&H—MANITOWOC
30-ton to 50-ton Capacity
Sectional Boom Lengths to 175 Feet

ROGERS LOW-BED TRAILERS
Up to 150-Ton Capacity

ROGER SHERMAN TRANSFER CO., INC.
EAST HARTFORD, CONN.
Branches: SPRINGFIELD, MASS. NEW HAVEN, CONN. ALBANY, N. Y.

FOR RENT

2 20 ton Bay City Cranes
1 10 ton Bay City Crane
1 Cleveland Ditching Machine—Model 95
1 ¾ yd. Bay City Crane, Shovel, or Backhoe-diesel
1 TD-14 Bulldozer-angle
1 D-4 Bulldozer-angle
1 108 shovel, crane, or backhoe
2 Gradalls
1 3 wheel 10 ton Roller
1 Jersey Stone Spreader
Front End Loaders—Rubber tired

BUCKS COUNTY CONSTRUCTION CO.
Penndel, Pennsylvania
Langhorne, 3795

For Rent

SPEEDCRANES
LATE MODELS

Manitowoc Diesel Powered Speedcranes for rent. 25, 40 and 60 ton capacities with booms 100' or more, 20' and 30' jibs. Special price on long rentals.

FORSYTHE EQUIPMENT CO., INC.
37-11 Vernon Blvd. Long Island City, New York
Tel. STillwell 4-1030

23 SURPLUS NEW BELT CONVEYORS

60 Inch	42 Inch	36 Inch	24 Inch
60 ft.	1500 ft.	1788 ft.	1000 ft.
100 ft.	800 ft.	962 ft.	80 ft.
160 ft.	600 ft.	572 ft.	35 ft.

DARIEN, 60 E. 42nd St., N. Y. 17, N. Y.

NEW AND REBUILT
STORAGE BATTERY
LOCOMOTIVES
1½ to 10 Ton — 18" to 56" Track Gauge
GREENSBURG MACHINE CO.
Greensburg, Penna.

PIPE

PIPE
VALVES and FITTINGS
All Sizes in Stock
NEW-USED
GREENPOINT IRON & PIPE CO. INC
Nagel and Stagg Streets Brooklyn, N.Y.

FOR SALE—*Immediate Delivery*
C.I. Water Pipe and Fittings—AWWA Standard

We specialize in pipe and fittings which are hard to get, having in stock such as the following:—

5 Lengths 60" B&S Pipe, Cl. D. 12' long
3—60" x 24" Solid Sleeves, Cl. D.
1—60" B&S 45 deg. Bend, Cl. D.
20" to 36" B&S 45 deg. Bends
3" to 30" Y-Branches—Type 2

Also C. I. B&S Pipe from 2" to 36", C. I. Flanged Pipe from 3" to 24". Always on hand a complete line of C. I. Fittings—al sizes and kinds.

TAGCO, INC.
111 Front St. Hempstead, L. I., N. Y.
Tel.—Hempstead 2-5535 or 2-8857

FOR SALE—SURPLUS—NEW PIPE
EXCELLENT CONDITION
4200'—10" Sch. 40 Seamless Steel Pipe
ASTM A-53, Grade "B"
Subject to Prior Sale
Contact:
THE RUST ENGINEERING COMPANY
20th & Nash Streets, Granite City, Illinois
Phone: Illinois, 5128.

Pipe Sizes ⅛" to 72" OD

PIPE, VALVES & FITTINGS
pipe piling • culverts • valves
specialists in prefabricating pipe

ALBERT PIPE SUPPLY CO., INC.

CUTTING-THREADING-FLANGING-WELDING
BEVELING-BENDING-COILING-LINING
TO ALL STANDARD SPECIFICATIONS

"one call gets them all"

fittings • FLANGES • WELDING • IRON-STEEL
SPEEDLAY pipe systems
Berry at North 13 Sts., B'klyn, N. Y.

FOR SALE

20,000' of 3 Conductor 2/0 Steel Taped Parkway Cable, Type RJFJ, 3000 V.
3,500' of 3 Conductor #2 Steel Taped Parkway Cable, Type RJFJ, 3000 V.
2—45 KVA, 2400 V. Primary 480/240 V. Secondary, 3 Phase, Dry Transformers
2—75 KVA, 2400 V. Primary 480/240 V. Secondary, 3 Phase, Dry Transformers
5—112½ KVA, 2400 V. Primary 480/230 V. Secondary, 3 Phase, Dry Transformers
3—100 KVA, 2300 V. Primary 460/230 V. Secondary, Single Phase, Oil Cooled Transformers
3—50 KVA, 2400 V. Primary 480/240 V. Secondary, Single Phase, Oil Cooled Transformers
3—100 KVA, 2400 V. Primary 480/240 V. Secondary, Single Phase, Oil Cooled Transformers
50—Misc. 2, 3, 5 & 15 KVA Single Phase Transformers. Also numerous switches, metal switch cabinets, 50 and 100 amp. cutouts, circuit breakers, etc.

Subject to prior sale

FRAZIER-DAVIS CONSTRUCTION COMPANY
1319 Macklind Avenue, St. Louis, Mo. STerling 1950
Box 135—Grahamsville, New York Grahamsville 2861

SURPLUS EQUIPMENT
FOR SALE OR RENT
Rebuilt—A1 Condition

1 Model 6 N.W. Shovel, diesel
1 Caterpillar D8 Bulldozer
1 Apsco Stone Paver, Model P120
1 New Shovel Front for Model 6 N.W.
1 Used Shovel Front for Model 25 N.W.

WILLIAMS CONSTRUCTION COMPANY
Middle River, Md. Phone: Essex 1310

FOR SALE
BYERS Model 80 CRANE and SHOVEL Comb.
Serial Number 2120.
BUCKEYE CLIPPER Model 70 CRANE with Fairlead for dragline, Serial No. 5099.
WORCESTER SOIL CONSERVATION District
SNOW HILL, MARYLAND

SALE OR RENT
1—675 CFM Chic. Pne. 125 H.P. Compressor
1—3/5 Ton Huber Tandem Roller
1—10 Ton Krane Kar Pne. Tires
1—20-Ton Ohio Steam Locomotive Crane
1—25 Ton Ohio Diesel Loco. Crane
1—80-D Northwest Shovel, 1949
1—35 Ton P&H 555 Truck Crane
1—20 Ton P&H 255 Truck Crane
B. M. WEISS COMPANY
Girard Trust Company Bldg. Philadelphia 2, Pa.

FOR SALE
34-E Dual Drum RANSOME Paver
Cummins Diesel Engine, 34' Boom
Hydraulic Controls
Price $9,000.00
ANDERSON EQUIPMENT COMPANY
Box 1737, Pittsburgh 30, Penna.
Phone: LEhigh 1-6020

PARTS FOR YOUR ASPHALT PLANT

We have for sale — the complete running gear and power erecting equipment for Cedarrapids Model E Asphalt Plant.

CONTRACTING & MATERIAL COMPANY
1235 Dodge Avenue Evanston, Ill.

PILING

FOR SALE
STEEL SHEET PILING
(NO CMP ALLOTMENT NEEDED)
AT CHIEF JOSEPH, WASHINGTON
Shipped New—Used Only One Job

CARNEGIE Length	MP-101 Pcs.	MP-102 Pcs.	TEES Pcs.
72-68 ft.	65	81	0
65-60 ft.	800	58	1
55-50 ft.	65	3	7
45-40 ft.	645	0	6

Also quantity 35 Ft. and shorter—Quick Shipment. Regardless of job, location. Write, Wire or Phone

MISSISSIPPI VALLEY EQUIPMENT CO
509 Locust St.
CHestnut 4474, St. Louis 1, Mo.

STEEL SHEET PILING
210 Pcs 40-60 ft M-112 So. Dakota
600 Pcs 35-40 ft M-112 Kansas City
66 Pcs 27-29 ft M-116 Kansas City
295 Pcs 17-19 ft M-112 Kansas City
86 Pcs 15-16 ft I-23 Kansas
117 Pcs 14-16 ft I-23 Missouri
70 Pcs 11-19 ft M-116 Oklahoma
Available for prompt shipment
Other lots at various locations
CONTRACTORS MACHINERY COMPANY
Phone Valentine 4740
2637 SW Blvd Kansas City 8, Mo.

FOR SALE—PRICED RIGHT
100,000 sq. ft. Used "Uniform" Panels
Assorted Sizes—Reasonably Good Condition
SOUTHEASTERN-LOVING-DOYLE AND RUSSELL
Fort Knox, Kentucky

TO HELP YOU...
find equipment you need
"Searchlight" Advertising

FOR SALE
New Wire Rope Blocks

12" Snatch Blocks with Hooks	$13.50
14" Snatch Blocks with Hooks	18.50
16" Safety Snatch Blocks with Shackles	20.00
14" Double Blocks with Shackles	13.00
18" Single 20 Ton with S. Shackle	25.00
18" 3-Sheave 30 Ton with Shackle	50.00
18" 4-Sheave 30 Ton with Shackle	75.00
#32 Drop Forge Hooks, New	2.00

ABERTHAW COMPANY
133 Southampton St. Boston 18, Mass.

RENT STEEL SHEET PILING

"Faster From Foster"—the exact lengths and sections — all standard makes—of Rental Piling to meet your job needs. Also Rent: Pile Hammers and Pile Extractors.

RAILS • TRACK ACCESSORIES • PIPE • WIRE ROPE
L.B. FOSTER CO.
Pittsburgh 30, Pa. New York 7, N.Y.
Chicago 4, Ill. Houston 2, Tex.

We do a Nation-Wide business in
STEEL SHEET PILING
IMMEDIATE SHIPMENT
2500 pcs. 72-18 ft. Carn. MP-101-West Coast
428 pcs. 60-35 ft. Beth. DP-2-New York
470 pcs. 60-20 ft. Carn. M-112-Kansas
280 pcs. 60-20 ft. Carn. M-116-Illinois
104 pcs. 80 ft. Inland I-22-Indiana
112 pcs. 40 ft. Larssen II-Alabama
Other lengths & sections used & new at other locations in United States for rent.
We have Nation-wide reputation for effecting QUICKEST SHIPMENTS
All sizes Vulcan & McKiernan Pile Hammers & Extractors for rent—Shop Rebuilt Regardless of location of job. Wire, Write or Phone
MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St., Chestnut 4474 St. Louis, Mo.

Your inquiry will have Special value . . .

If you mention this magazine, when writing advertisers. Naturally, the publisher will appreciate it . . . but, more important, it will identify you as one of the men the advertiser wants to reach with this message . . . and help to make possible enlarged future service to you as a reader.

PROFESSIONAL SERVICES

Duval Engineering & Contracting Co.
General Contractors
FOUNDATION BORINGS
For Engineers and Architects.
Jacksonville, Florida

Rader Engineering Co.
Water Works, Sewers, Refuse Disposal, Ports, Harbors, Flood Control, Bridges, Tunnels, Highways, Airports, Traffic, Foundations, Buildings, Reports, Investigations, Consultations
111 N.E. 2nd Ave., Miami 32, Florida

Consoer, Townsend & Associates
Water Supply, Sewerage, Flood Control & Drainage, Bridges, Express Highways, Paving, Power Plants, Appraisals, Reports, Traffic Studies, Airports, Gas & Electric Transmission Lines.
351 East Ohio St., Chicago 11, Illinois

Soil Testing Services, Inc.
Theo. W. Van Zelst — Carl A. Metz
John P. Gnaedinger
Soil Borings — Rock Coring
Engineering Testing of Soils
Soil & Foundation Reports
4520 W. North Ave. — Chicago 39

Metcalf & Eddy
ENGINEERS
Investigations — Reports — Design
Supervision of Construction and Operation
Management — Valuation — Laboratory
1300 Statler Building, Boston 16

Jackson & Moreland
Engineers and Consultants
Design and Supervision of Construction
Reports—Examinations—Appraisals
Machine Design — Technical Publications
Boston — New York

Porter, Urquhart & Beavin
O. J. Porter & Co.
Consulting Engineers
Airports-Highways-Dams-Structures
Foundations-Stabilization-Pavements
415 Frelinghuysen Ave., Newark 5 N. J.
76 Ninth Ave., New York 11, N. Y.
3568 West Third St., Los Angeles 5, Calif.
516 Ninth St., Sacramento 14, Calif.

Ammann & Whitney
Consulting Engineers
Design — Construction Supervision
Bridges, Buildings, Industrial Plants, Special Structures, Foundations, Airport Facilities, Expressways.
76 Ninth Avenue, New York 11, N. Y.
724 E Mason Street, Milwaukee 2, Wis.

Severud-Elstad-Krueger
Consulting Engineers
Structural Design - Supervision
Reports - Buildings - Airports
Special Structures
415 Lexington Avenue
New York 17, N. Y.

Albright & Friel, Inc.
Consulting Engineers
Water, Sewage and Industrial Waste Problems, Airfields, Refuse Incinerators, Power Plants, Industrial Buildings, City Planning, Reports, Valuations, Laboratory.
121 So. Broad St., Philadelphia 7, Pa.

Frederick H. Dechant
Consulting Engineer
Chairman of the Board,
Frederic B. Harris Inc.
Water Works, Industrial Wastes, Sewerage, Recovery Processes, Hydraulic Works, Gas Plants
Phila.; Fidelity Phila. Trust Bldg.
New York: 27 William St.

Atlas Engineering Corp.
Industrial Plant Design
Research Laboratories
Nuclear Development Facilities
Housing and Public Works
Investigations — Reports
Knoxville and Oak Ridge
Tennessee

Preload Engineers Inc.
Consultants in Prestressed Design
Bridges—Bldgs.—Marine Structures
Tunnels—Pavements—Tanks—Pipe
Investigations—Reports—Plans and Specifications
Construction Supervision
955 N. Monroe St., Arlington, Virginia

Marine Diving

Walter Detrick
Marine Diver
Construction • Repair • Salvage
Quincy, Illinois
9006 Phones 750

Inspecting and Testing

Johnson Soils Engineering Laboratory
Engineering design and construction tests run from MOBILE LABORATORY UNITS at construction site. Field load bearing tests.
193 West Shore Ave., Bogota, N. J.
Bogota-Hubbard 7-4408

SEARCHLIGHT SECTION

SURVEYING INSTRUMENTS

USED • REBUILT • SALE • RENT • REPAIRING

FROM STOCK
Brand New & Rebuilt
TRANSITS & LEVELS
Fully equipped modern shop—all makes and models repaired — all work guaranteed — instruments rented
Midwest Representative: W. & L. E. Gurley
NATIONAL BLUE PRINT CO.
Established 1914.
210 S. Canal St. — Chicago (6), Ill.

SPECIALIZED REBUILDING
of surveying and engineering instruments.
All makes and models expertly repaired in modern shop. All work guaranteed.
USED REBUILT INSTRUMENTS
for sale or rent
ROY D. HICKERSON
8 N EDMONDSON AVE INDIANAPOLIS 19 IND

TRANSITS and LEVELS
NEW OR REBUILT
SALE OR RENT
HEADQUARTERS FOR REPAIRS — any make

We will buy or trade in old Transits, Levels, Alidades, etc. Send instruments for valuation.
Write for Catalog NR-36 of new engineering Instruments, Engineering Field Equipment and Drafting Room supplies and NRL-36 for list of *rebuilt* instruments.
WARREN-KNIGHT CO.
Mfrs. of Transits & Levels
136 N. 12th St. - Philadelphia, 7 Pa.

Our Craftsmen do
INSTRUMENT REPAIR AND OVERHAUL

- Complete department—handles all makes.
- Experienced craftsmen do all work.
- Includes thorough overhaul, cleaning, oiling and adjustment.
- Precision work guaranteed.

DAVID WHITE COMPANY
317 W. Court St. • Milwaukee 12, Wis.

INSTRUMENTS FOR RENT
We rent transits and levels on a monthly or yearly basis. Reasonable rates. All instruments are fully guaranteed in first class working order.
DAVID WHITE COMPANY
317 W. Court St. • Milwaukee 12, Wis.

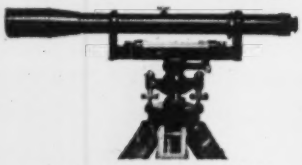
IF THERE IS
Anything you want
that other readers of this paper can supply
OR—
Something you don't want
that other readers can use, advertise it in the
Searchlight Section

GURLEY REPAIR SERVICE
• Send your Gurley instrument to the factory for repair, rebuilding, adjustment, or service. Genuine Gurley parts, properly fitted, available from stock. Factory workmanship and equipment. Estimates submitted. Shipping box furnished free on request.
W. & L. E. GURLEY
540 Fulton Street, Troy, N. Y.
➤ Write for leaflet "Gurley Repair Service"

ALL MAKES
RE-BUILT REPAIR RENT REAL EXPERTS
BUFF
89 Day St., New York

QUALITY INSTRUMENTS
Finest Japanese Optics
GUARANTEED ACCURACY
STANDARD AMERICAN SPECIFICATIONS
Each Instrument Has Coated Lenses

4" SURVEYOR'S TRANSIT—26X
Special Introductory Offer
Complete with collapsible tripod and carrying case
$375.00



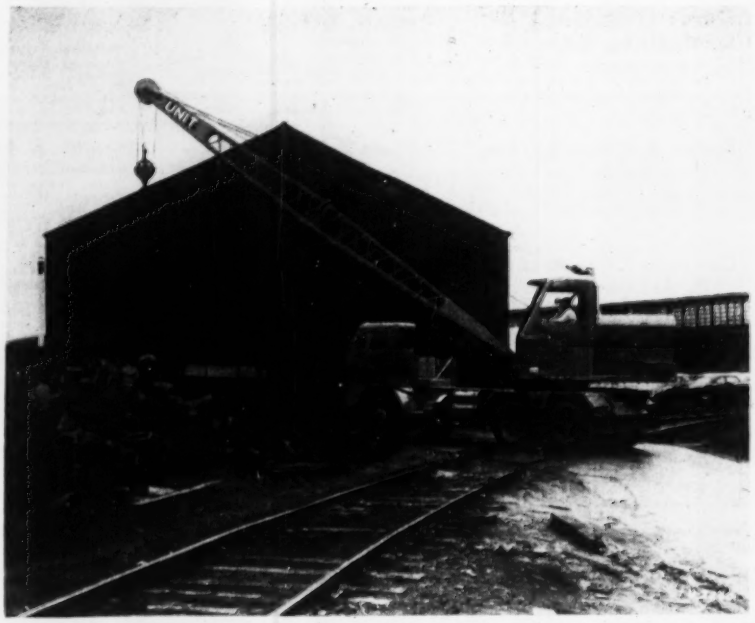
18" DUMPY LEVEL—32X
Special Introductory Offer
$270.00 Complete with fixed leg tripod and carrying case.
Write For Descriptive Folders

Write for free folders on other surveying and engineering instruments

UMECO OPTICAL DIVISION
UNION MERCANTILE CO.
465 Calif. St. • San Francisco, Calif.

Before you plan Foundations
INVESTIGATE
Vibroflotation
Cut Foundation Cost by this Modern method of
Soil Compaction
for Industrial Foundations
Airports • Highways
Earth Dams • Levees
Deep Foundations
Concrete Dams
This money-saving process of granular soil compaction increases load bearing capacity... diminishes void volume, permeability and active soil pressure... eliminates settlement under vibratory loads.
Write for new Bulletin . . Important facts for engineers about Vibroflotation
VIBROFLOTATION FOUNDATION CO.
575 Sixth Ave. • Pittsburgh 19, Pa.
ATlantic 1-2500

NEW PRODUCTS



DUAL CONTROL permits one man operation of both truck and crane for increased mobility and more accurate positioning.

New truck crane added to Unit line

The new Unit truck crane, Model 1014, has a lifting capacity of 12 tons at a 10-ft radius and when doubling as an excavator is rated at ½ cu yd. Equipped with a 30-ft boom the rig weighs in at approximately 37,550 lbs.

The upper machinery is powered by either a two-cylinder diesel or six-cylinder Chrysler Industrial gasoline engine with fluid torque drive. The torque converter is said to eliminate shock loads and provide steady power for peak loads without stalling.

The crane incorporates twin hook rollers mounted at the front and rear of the turntable. These adjustable hook rollers are said to relieve the center-post of stresses and at the same time reduce wear on the turntable bushings.

The crane carrier is of conventional unit design and features air boosters for power steering. Truck power is furnished by a six-cylinder R.D. 406 International Harvester Industrial gasoline engine.

Standard transmission offers five speeds forward and one reverse with a top road speed of 35 mph. An auxiliary transmission extends the total speeds up to ten forward and one reverse.

The crane is convertible to all attachments and is also available with dual control enabling the operator to govern both travel and crane operations from the crane cab.

Overall width of the equipment has been held to 8 ft and wheelbase is 160 in. to the center of the tandem axle. Axle loads of the Unit carrier meet most highway regulations. Unit Crane & Shovel Corp., Milwaukee 14, Wis.

Overdrive for four-wheeled DW20 Cat tractors

Caterpillar Tractor Co. has developed an overdrive that will increase the top speed of its DW20 four-wheeled tractors by eight mph. On DW20's with the 15.75 to 1 final drive reduction the maximum speed with overdrive is now 34 mph. Addition of the overdrive to tractors with the 21 to 1 final drive reduction increases the top speed five mph, from 20 to 25 mph.

Combined with the present standard transmission, the overdrive gives the tractor a range of ten speeds forward and two in reverse. It is available as an attachment on new machines or for installation on units now operating in the field.

(Continued on page 171)

"Dressing The Diver," lithographed on stone for U.S. Pipe and Foundry Co. by John A. Noble, A.N.A.

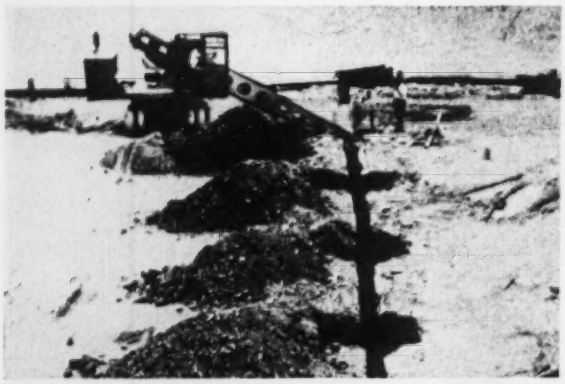
OUR FLEXIBLE JOINT PIPE is highly regarded by water, gas and sanitation engineers for dependable service in submarine lines. For many years, it has been used in notable and difficult installations throughout the nation.

U. S. flexible joint pipe in all sizes, and pipe 30-inch and larger with other types of joints, are made by the pit cast process. Our pipe, 2-inch through 24-inch, is cast centrifugally in metal molds with bell-and-spigot, mechanical joint or plain ends. All of these types of pipe and joints are widely used for water, gas, sewerage and industrial service and are readily available to meet your requirements.

United States Pipe and Foundry Co.,
General Offices, Burlington, N. J.
Plants and Sales Offices Throughout the U. S. A.

U.S.
PIPE

With the multi-purpose Gradall you can do it...

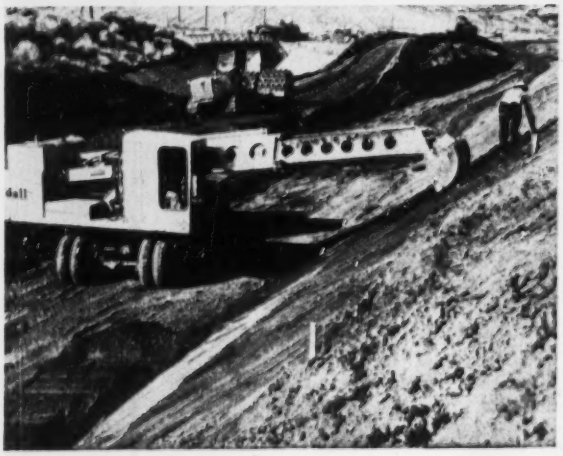


BETTER...

Yes, the Gradall operator has such complete control of the telescoping boom and wrist-like action of the tool that jobs are not only done better, but often to hand finish "specs". Here the Gradall's positive down pressure enables the operator to dig small holes—deep and neat—and a straight, narrow trench, ready for pouring foundation footings without any additional forms. Such accurate work is not confined to the "wide open spaces", because the Gradall works in many tight places, even inside buildings, completely inaccessible to other machines.

FASTER...

Where other machines falter, the Gradall's speedy arm-action and positive down pressure really go to work! For instance, in ripping asphalt pavement one attachment scores the pavement. Then with a second attachment the Gradall removes large chunks, swinging around to load into trucks—all in one pass. Pavement is removed right down to the sub-surface, eliminating clean-up hand labor. Similarly, it removes grouted brick so smoothly that most of the brick can be reclaimed.



FOR LESS...

When one machine can replace several machines, or as many as 40 hand laborers—and do the job better and faster—savings are bound to mount! A quick, easy change of attachments makes the Gradall an entirely "new" machine, enabling it to often do all of the phases of a complex job. On the job illustrated, it cut this slope to the exact desired angle, dug ditches for drains, and handled other work accurately and fast—without hand labor. Yes, the Gradall is a cost-cutter on all kinds of jobs!

Find out how a Gradall can make money for you! Contact your Gradall Distributor for a field demonstration.

Gradall
DIVISION OF WARNER & SWASEY
Cleveland

Gradall Distributors in over 75 principal cities in the United States and Canada

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

The attachment is mounted between the engine and transmission of the tractor and is controlled by a manually operated shift lever which is located next to the regular gear shift lever.

Installation requires a special transmission front cover, a clutch shaft and a universal joint, all of which are supplied in a special field installation package. The only other modification required on the DW20 is cutting a slot in the floor plate for the overdrive shift lever. CATERPILLAR TRACTOR CO., PEORIA 8, ILL.

Unloader gives concrete blocks a fast shuffle

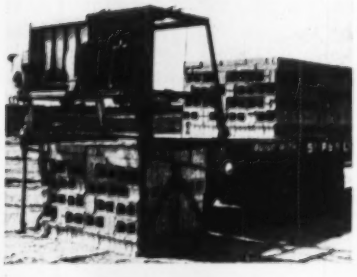
Sixteen tons of concrete blocks—all 1,088 of them—unloaded in twenty minutes is the claim made for Superlite, a new unloader manufactured by Builders Equipment Co.

Steel tracks along the edge of the truck bed guide a self-propelled carriage to a position over the load. The triangular frames are lowered along the sides of the load and pipes or bars are inserted in the holes of the blocks. The load, raised free of the truck, is rolled back under power and deposited on the ground at the rear of the truck or on another truck. A bridging system can be incorporated in the system to facilitate truck to truck transference.

Power to move the carriage is transmitted through a chain drive from a 7½-hp Briggs and Stratton air-cooled engine.

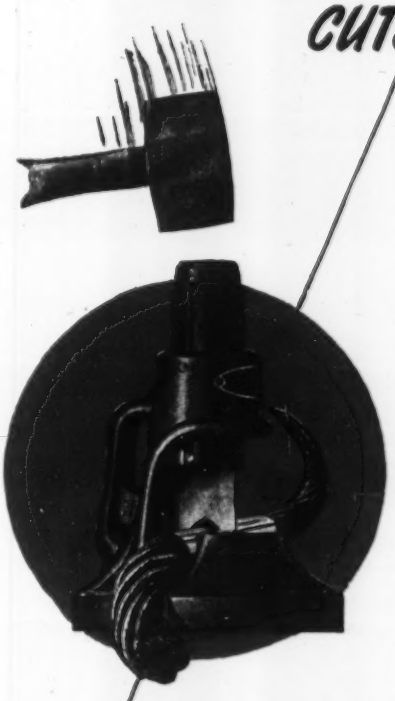
Although the unit shown here is unloading concrete blocks, test units have been made for many unloading purposes. Among these materials have been cement and clay tiles, sacked products, barrels, drums, crates and machinery.

According to the manufacturer, the loader can be installed or removed in ten minutes, leaving the truck or trailer ready for other purposes. BUILDERS EQUIPMENT CO., 4012 N. CENTRAL AVE., PHOENIX, ARIZ.



Morse-Starrett
WIRE ROPE CUTTER

CUTS WIRE ROPE



FASTER...
Especially designed cutting blade and dies assures fast cutting action... The hammer principle eliminates any special skill requirements.

CLEANER...
No jagged ends. The wire rope is cut with ends smooth and clean for perfect threading or splicing.

SAFER...
The enclosed cutting blade locked in the body of the cutter assures perfect safety.

and it's

PORTABLE...
Models for tool kit or stationary operation. With cutting capacities up to: 1 inch, 1-1/16 inch, 1½ inch.

SEE YOUR DEALER OR WRITE DEPT. "M"

Morse-Starrett Products Company
1204 - 49TH AVENUE, OAKLAND 1, CALIF.

DRILLING CONTRACTORS
Diamond and Shot Core Borings
Dry Sample Borings
Grout Holes and Pressure Grouting
Foundation Testing for Bridges, Dams and other Heavy Structures
Manufacturers, also, of Diamond Core Drilling Machines and complete accessory equipment, including all types of Diamond Drilling Bits. Ask for Bulletin 320.
SPRAGUE & HENWOOD, Inc.
Dept. E, Scranton 2, Penna.

DESIGNERS—CONSULTING
ENGINEERS
☆ Plant Layouts • • Estimates
☆ Investigations & Reports
☆ Supervision of Construction
INDUSTRIAL BUILDINGS • STADIUMS
GRAND STANDS • FIELD HOUSES
AIR CONDITIONING SYSTEMS
BRIDGES • GARAGES • LABORATORIES
THE OSBORN ENGINEERING COMPANY
7016 EUCLID AVENUE CLEVELAND 3, OHIO

Gar Wood

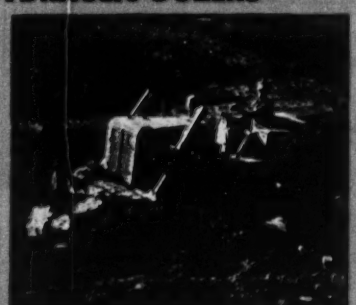
"ROLL-RITE" DOZERS

. . . Utilize all your Power!

Only Gar Wood offers both hydraulic and cable controlled Tipdozers and Dozecasters, perfectly matched to your Allis-Chalmers tractors. When tractors are used for maximum utility, with both dozer and scraper, Gar Wood's model 281 cable control unit will easily handle either. When used as a dozer only — front mounted model 151 cable control unit is available. Both units have planetary gearing for smooth, easy operation. TIPDOZERS can be adjusted vertically up to 12" at either end of moldboard. Angle of moldboard on DOZECASTERS can be changed to 25" in either direction. SPECIFY a Gar Wood dozer for your new Allis-Chalmers tractor to get more work from your power!

A FULL LINE OF HYDRAULIC DOZERS

Gar Wood Tipdozers and Dozecasters, with all hydraulic equipment self-contained in a streamlined, front-mounted "package" are available for all Allis-Chalmers tractors.



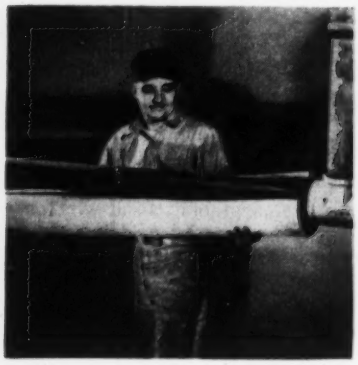
GAR WOOD GW INDUSTRIES

GAR WOOD INDUSTRIES, INC.

Findlay Division • Executive Offices • Wayne, Michigan

F-336

NEW PRODUCTS



Pipe insulation snaps on

Molded of glass fiber, a new one-piece pipe insulation can be easily spread at the seam and snapped into place. Flexible and resilient, the new insulation will take a great deal of abuse both in transportation or application.

The G-B Ultrafine pipe insulation is composed of fine, blown-glass fibers bonded with a phenolic resin and molded into cylindrical sections three and six ft long and with optional diameters and thicknesses. Since there are no organic fibers included, the insulation does not rot or decay and resists attack by most acids and alkalis. Further, the material does not become soft or muddy when in contact with water.

Thermal conductivity of the insulation is quite low with K factors ranging from 0.23 at a mean of 100 deg. F and 0.31 at a mean of 300 deg F. For comparison, mineral wool has K factors of 0.35 and 0.47 at mean temperatures 100 and 300 deg. F., respectively.

For heated piping applications with temperatures exceeding 350 deg F. the insulation may be used as a second layer.

Prolonged contact with surfaces hotter than 350 deg F. will cause the phenolic resin bond to deteriorate, but the material can be used as a second layer insulator for high temperature applications. The insulation is satisfactory for all cold installations.

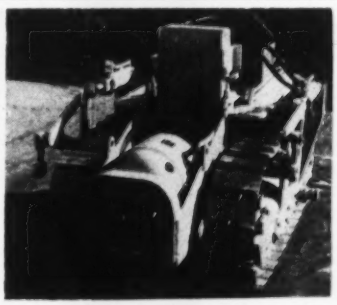
The insulation is applied by slipping the proper diameter of insulation over the pipe to be covered. Then the steams are closed together using pressure sensitive mastic tape, staples, string, muslin and paste or any other standard fastening means. Wherever necessary the insulation may be cut to fit with a knife. The insulation can then be painted or not as desired. GUSTIN-BACON MFG. CO., KANSAS CITY 5, MO.

One-man chain saw weighs 30 lbs, delivers 4 bhp

Designed for high-speed cutting in construction and land clearing work, a new one-man chain saw is reported to have ample power to cut through timbers up to five ft. in diameter. In dynamometer tests the new saws, taken right from the assembly line and before breaking in, are said to have delivered more than four bhp.

Model 4-30, as it is designated, weighs 30 lbs. complete with 14-in. chrome-plated blade and chain. Blade sizes range up to 36 in. in length, and a 15-in. bow attachment is also available.

An all position fuel system permits operation of the saw at any angle without carburetor adjustment. McCULLOCH MOTORS CORP., 6101 W. CENTURY BLVD., LOS ANGELES 45, CALIF.



NO CARBON MONOXIDE—An electrically powered "cat" has been built to eliminate dangerous carbon monoxide gases in an aqueduct tunnel-building project in the state of Washington. A 40-hp, 990-rpm General Electric Tri-Clad motor drives the regular transmission with four speeds forward and one reverse. It operates on 220/440 volts supplied by a trailing cable from outside the tunnel shaft. The "Cat" is shown with blade detached. The motor was installed by Shepherd Tractor and Equipment Co., Atlantic & Bandini Blvds., Los Angeles 22, Cal.

GAR WOOD
Buckeye

WHEEL-TYPE UTILITY DITCHER

...for both city and country jobs!

The Buckeye model 306 is fully capable of day after day operation on pipeline jobs yet handles heavy work in confined city areas equally well . . . Digs to 5'6" depths in 12", 14", 16", 18", 20", 22" and 24" widths at speeds up to 21 f.p.m. Exactly the right size for small water, gas and sewage mains; electric and telephone cable and conduit; foundation footings, highway drainage and service lines . . . Only 8 ft. wide with a ground bearing pressure less than that of the average foot-step! Easy to load on trailer for fast transportation. Pipeline operators find it ideal for digging gathering lines, short loops, product lines, etc. . . . Built to Buckeye's exacting standards of dependability . . . Always remember that—

Only Buckeye has a Ditcher for every Ditching Job!

BUCKEYE '160' SERVICE DITCHER

A big, ladder-type ditcher that digs to full 16 ft. depth in 14 widths ranging from 18" to 48". Easily handles the big pipe and sewer jobs yet can turn in its own length.

GAR WOOD INDUSTRIES, INC.
Findlay Division • Executive Offices • Wayne, Michigan

Tough
FOUNDATION PROBLEM ?
call Western !

Over the past 30 years, WESTERN has continually developed and perfected solutions to foundation problems—creating entirely new types of piles and new foundation techniques—an outstanding contribution to foundation science and practice.

Consultation invited.

COMPLETE FOUNDATIONS FOR
Industrial Plants, Power Plants, Piers and Docks, Bridges, Airports, Steel Plants, Housing Projects, Commercial Buildings, Schools, etc.

WESTERN
FOUNDATION CORPORATION
2 Park Ave., New York 16
308 W. Washington St.
Chicago 6, Ill.

TIMBERLOCK
Split-Ring
TIMBER CONNECTORS

Timberlock Split Rings comply with all Government specifications as to manufacture and material. Their excellent quality, favorable price, prompt service and acceptability have been proved by their satisfactory use in many projects under Government Jurisdiction. Extensively used in private building and multiple housing projects. *Write for complete information on prices and delivery.*

Dept. ER-5

THE MARSH COMPANY
HASTINGS, NEBRASKA

Attachment converts tractor to bucket loader, back-hoe or shovel

Attached to a light tractor, such as Ford or Ferguson, a hydraulic Pippin-excavator can be used for trenching, excavating or loading.

As a back-hoe the excavator will dig trenches 10 ft deep and from 18 to 36 in. wide depending on the size of the bucket used. 120 deg swing action permits the operator to deposit spoils 12½ ft on either side of the centerline of the trench.

Converted to a shovel or loader—the conversion takes five minutes—the excavator has a 5 cu ft capacity and a maximum hoist height of 12 ft.

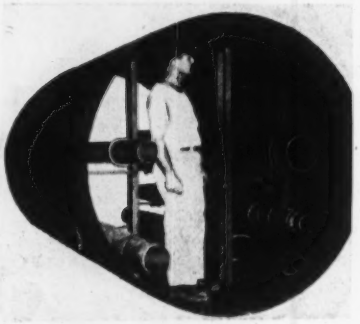
Power for the excavator is supplied by a hydraulic pump driven by power take-off from the tractor engine. Hydraulic fluid from the ten gal reserve tank is supplied to the double-acting cylinders at 1000 psi.

In operation the excavator is supported by two hydraulic stabilizers, individually adjustable to permit the digging of plumb ditches on uneven ground or on slopes up to 15 deg. PIPPIN CONSTRUCTION EQUIPMENT, INC., WHITE RIVER JUNCTION, VT.

Man-sized conduit serves as service tunnel

A large diameter conduit system has been developed for protection of underground distribution piping and other utility services.

Designed to meet service tunnel requirements of industrial plants, municipalities, hospitals, etc., the system is completely prefabricated to job requirements with distribution piping for steam, condensate, water lines or process purposes—all in place and insulated where required. Included also are traps, valves and expansion devices where specified. Provision may also be made for electrical and communication cables, ceiling lights, etc.



The Utilidors, as they are called, are shipped in units approximately 21 ft. long with simplified joint connections and fittings such as tees and elbows prefabricated to fit into the conduit runs.

The housing is constructed of corrugated ingot iron conduit, hot-dip galvanized and protected with asphaltic or phenolic resin coatings.

Conduit diameters range from 36 in. to 84 in., depending on the nature and number of services to be housed. RIC-WIL CO., UNION COMMERCE BLDG., CLEVELAND 14, OHIO.

THE ENGINEER'S REPORT

DATA

LUBRICANT RPM Delo Oils

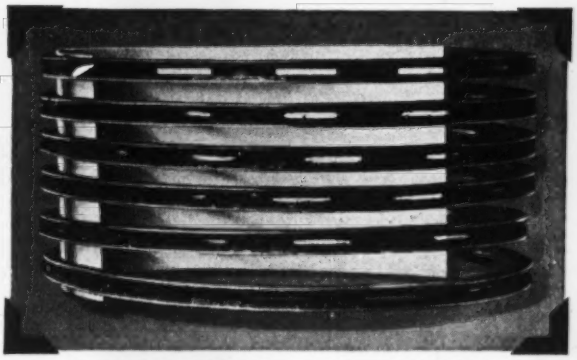
UNIT D-8 Caterpillar

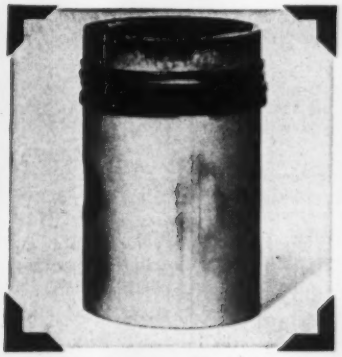
SERVICE Earthmoving contract work

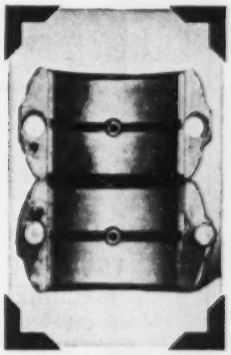
CONDITIONS Heavy loads — dirt, dust

FIRM T. H. Walsh-Argo Engineering Company Los Angeles

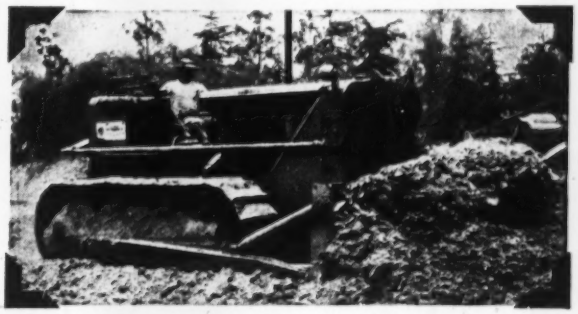
Engine parts "like new" after 7721 hours!







THIS SET OF OIL RINGS and the piston and con-rod bearing at right—all from a D-8 Caterpillar using RPM DELO Heavy Duty Lubricating Oil—appear just as they did when removed after 7721 hours of earthmoving work. There were no broken or stuck rings; the oil-return holes were open; all parts were free from deposits. The crankshaft was not more than 0.001 inch out of round at any point and was reinstalled.



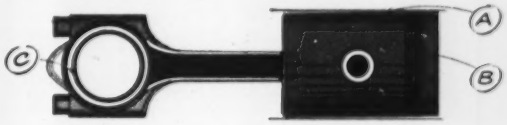
THE D-8 "CAT" above is the one from which the parts came. It is one of 11 large diesel tractors operated by the T. H. Walsh-Argo Engineering Co., Los Angeles. By using RPM DELO Oils, the company regularly gets 5000 or more hours between overhauls.

FREE BOOKLET on the RPM DELO Oils gives you complete information on how to meet any heavy-duty engine operating condition with one of these oils. Write or ask for it today.

RPM DELO LUBRICATING OILS

TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

How RPM DELO Oils reduce wear, corrosion, oxidation in all Heavy-Duty Engines



A. Contain special additives that provide metal-adhesion qualities...protect parts whether hot or cold, running or idle.

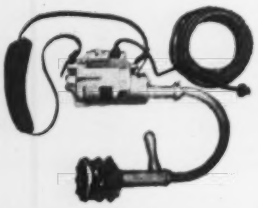
B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent piston scuffing.

C. Special compounds stop corrosion of any bearing metal and foaming in crankcase.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado

"BERG"
CONCRETE SURFACER
MODEL A



"Berg" equipment is used extensively for surfacing and finishing applications on concrete construction.

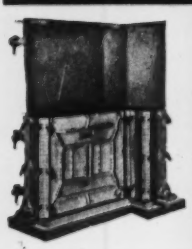
The many "BERG" Models available, permit exact selection for your particular application.

The distinctive "BERG" features give you the kind of results that are realized in better quality work, combined with lower costs.

"BERG" Heads and Attachments are interchangeable, thereby providing adaptability for vibrating, wire brushing, sanding and polishing applications.

THE CONCRETE SURFACING MACHINERY CO.
4667 SPRING GROVE AVE.
CINCINNATI 32, OHIO

Save manpower time and material



When placing concrete, use this nationwide Form Rental and Engineering Service to increase profits, reduce costs.

Standard units of Economy Forms fit most jobs. But where needed, special forms can be built to specification.

- Foundations and Walls
- Water or Sewage Treatment Plants
- Tanks — Circular and Rectangular
- Bridges, Culverts and Box Tunnels

ECONOMY FORMS CORP.
Home Office: Des Moines, Ia.

District Sales Offices:
Kansas City, Mo.
Omaha, Neb.
Minneapolis, Minn.
Fort Wayne, Ind.
Cincinnati, Ohio
Pittsburgh, Pa.
Springfield, Mass.
Metuchen, N. J.
Decatur, Ga.
Dallas, Texas
Los Angeles, Calif.
Oakland, Calif.
Denver, Colo.

ECONOMY FORMS
metal forms for concrete construction

PUBLICATIONS

Welding Aluminum—These two sheets give full technical information and data for welding and soldering aluminum, zinc base metal, or any alloy thereof, with their special alloy welding rod. Write for Chemalloy Welding Information, SIGHTMASTER CORPORATION, 111 CEDAR STREET, NEW ROCHELLE, NEW YORK.

Utility Truck Body—With illustrations, the various uses of this concrete carrying truck body are described in this 4-page folder. The body is designed for hauling centrally mixed concrete. Write for Form L-116, MANUFACTURING DIVISION, MAXON CONSTRUCTION COMPANY, INC., 131 NORTH LUDLOW STREET, DAYTON 2, OHIO.

Pneumatic ejectors—A 32-page engineering manual features data on a complete line of mechanically and electrically controlled Shone pneumatic ejectors. Included are curves, tables and suggestions for determining head and capacity requirements; selection chart; suggested piping diagrams, and air demand, compressor and air storage information and diagrams. The manual has been written for engineers, architects and consultants concerned with waste disposal systems in buildings and municipal sewage lift stations. Write for Manual 4000-B1. YEOMANS BROTHERS COMPANY, 1999-1 NORTH RUBY STREET, KNOWLES PARK, ILLINOIS

Wrap-around insulation—An 8-page booklet describes Aerowrap, a new wrap-around insulation for hot or cold pipe of all sizes. OWENS-CORNING FIBERGLAS CORP., TOLEDO 1, OHIO.

Rubber-lined pumps—A new 20-page bulletin outlines the advantages of rubber-lined sand pumps for maintaining high efficiency over extended periods of operation. The booklet also lists all parts of Denver Equipment Company's SRL Rubber Lined Sand Pumps and shows them by sectional views, lists clearance and foundation dimensions, friction of water in pipes, SRL pump capacities and a motor selection table. Bulletin B9-B8. DENVER EQUIPMENT COMPANY, 1400 17TH ST., DENVER, COLO.

Motor-generator reference—This 50-page pamphlet is reprinted from the 1952 edition of Lincoln's industrial-commercial electrical reference book. The booklet can assist in the selection of motive power to handle most industrial applications. "Allis-Chalmers Motor and Generator Reference Book," 51R7933. ALLIS-CHALMERS MFG. CO., 1018 S. 70TH ST., MILWAUKEE, WIS.

Subsurface problems—A short brochure describes a refraction seismic survey service now available to engineers and construction men. Included is an illustrated description of how seismic survey can help foretell unfavorable subsurface conditions that will be met in construction. GEOLOGY AND MINERALOGY DIVISION, INSTITUTE OF RESEARCH, SYRACUSE UNIVERSITY, SYRACUSE 10, N. Y.

Pyingado—Pyingado, one of the most valuable Burmese timbers, is described in Forest Products Laboratory Report No. 1938, one of a series of information leaflets on foreign woods. Pyingado is reported to be one of the strongest and hardest of Indian and Burmese timbers—similar to Burma teak. DIRECTOR, U. S. FOREST PRODUCTS LABORATORY, MADISON 5, WISCONSIN.

Drafting supplies—A new 60-page catalog describes a complete collection of drawing and drafting supplies. THE ALVIN COMPANY, WINDSOR, CONNECTICUT.

Porous drain pipe—A two-page brochure and reprints from construction magazines describes the advantages of using porous drain pipe on jobs where large quantities of water must be drained away rapidly. A sample of Poroswal, a drain pipe of this type, is included with the literature. WALKER CEMENT PRODUCTS COMPANY, LITTLE FERRY, NEW JERSEY.

Modern toll houses—A pamphlet describes the latest in toll booths and their operation at Atlantic Beach Bridge, Nassau County, Long Island. Included is a complete glossary of modern toll equipment terms. THE ELECTRONIC SIGNAL COMPANY, DEPARTMENT EN, WILLISTON PARK, NEW YORK.

Standardized construction – Those planning expansion of present plants or storage facilities might be interested in a 20-page booklet entitled "Standardized Building by Luria". Illustrated, the publication describes the advantages of standardized construction. LURIA ENGINEERING COMPANY, 500 FIFTH AVENUE, NEW YORK 36, N. Y.

get more of everything but wear . . . with

BUCYRUS-ERIE TD-24

BULLGRADERS— BULLDOZERS— TILTING BULLDOZERS

more *VERSATILITY* Bullgrader blade can be set straight ahead, angled right or left, or tilted vertically — no special tools are required. Tilting bulldozer blade can be adjusted as much as 16 in. above opposite end.

more *PAYLOAD CAPACITY* Scientifically curved moldboard rolls dirt instead of pushing it — builds up bigger loads on every pass while using less tractor power. Bucyrus-Erie blade equipment fully harnesses the superior power of the International TD-24 tractor.

more *VISIBILITY AND CONTROL* Front or rear mounted winches have improved planetary drive, give operator instant-response control over blade. Exceptional visibility lets him accurately gauge his work for fast, clean dozing.

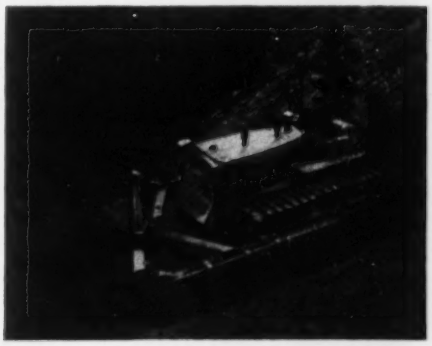
less *WEAR* Tough, wear-resistant steels prolong the life of Bucyrus-Erie blades. Proper weight distribution with careful balance of blade to tractor puts full tractor power to work with less wear and tear on all parts. 16T53

BUCYRUS-ERIE COMPANY South Milwaukee, Wis.

SEE YOUR INTERNATIONAL INDUSTRIAL TRACTOR DISTRIBUTOR

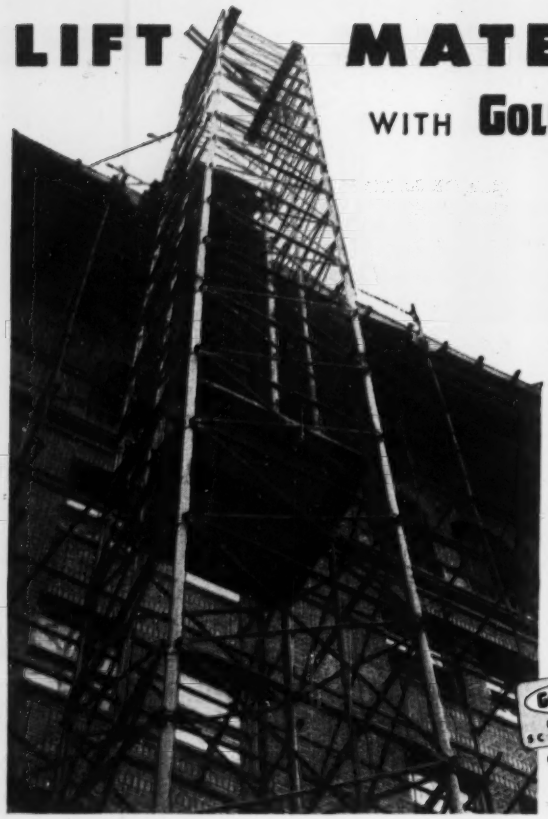
for all the facts about Bucyrus-Erie blades for the TD-24 . . . they deliver the kind of performance you need.

BUCYRUS ERIE



LIFT MATERIALS for LESS!

WITH GOLD MEDAL STEEL HOIST TOWERS



This is only *one of many* types of equipment we have to help contractors increase profits by cutting construction costs. Gold Medal Steel Hoist Towers save erection and dismantling time and speed up material handling. Firesafe—they're easier and more economical to erect than wooden towers . . . and much *safer*, of course. All parts—interchangeable—are recoverable—they're used again and again *without waste*.

Ask for FREE Bulletin HT-2. See how these towers can speed your jobs.

	Heavy Tower	Light Tower
Size of legs	3" pipe	2" xhy pipe
Section height	6' 6"	6' 8"
Max. height	851' 6" Std.	130'
Live Load Cap.	5000 lbs.	3000 lbs.
Max. size bucket	35 cu. ft.	18 cu. ft.

PLATFORM SIZES—Light or Heavy Towers

Platform Accommodates	Single Shaft Tower	Double Shaft Tower†
2 wheelbarrows or 1 concrete cart	5'7" x 5'9"	5'7"x5'9" and 5'2 ½"x5'9"
3 wheelbarrows or 2 concrete carts	7'3" x 5'9"	7'3"x5'9" and 6'10 ½"x5'9"

† Also available with 2 and 3 wheelbarrow or 1 and 2 concrete cart sizes combined.

Remember this: we have *all* types of modern scaffolds. Our stocks, spotted in major cities from coast to coast, are the largest and most complete. *Whatever your job . . . We can scaffold it for you with the* RIGHT *scaffold.*

GOLD MEDAL LADDERS SCAFFOLDING ®

for Greater Safety...Efficiency...Economy

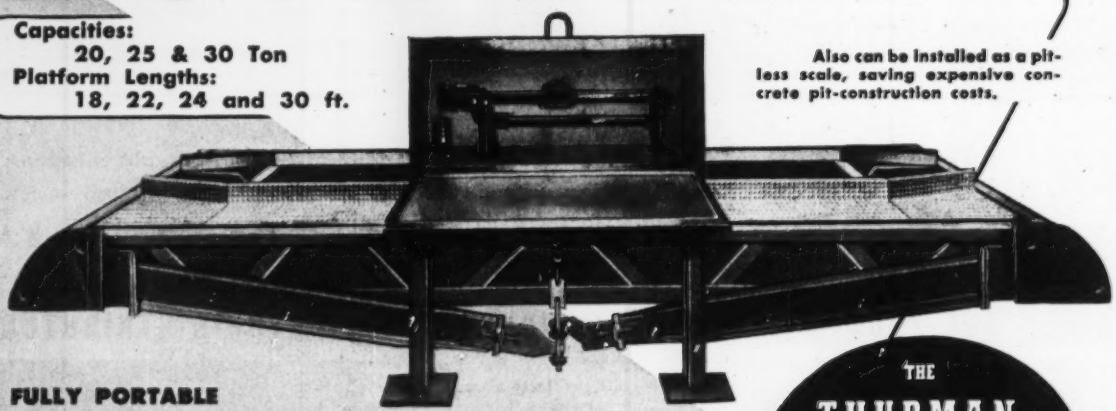
THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street, Dept. ENR, Long Island City 1, N. Y.
West Coast Plant: 6931 Stanford Ave., Los Angeles 1, Calif.

MOVE IT TO THE JOB

Capacities:
20, 25 & 30 Ton
Platform Lengths:
18, 22, 24 and 30 ft.

Also can be installed as a pitless scale, saving expensive concrete pit-construction costs.



FULLY PORTABLE

This scale can be moved from job to job as a unit merely by removing the six bolts which hold the side levers in place. The assembled scale can then be lifted and loaded on a truck for transporting. Once positioned, it can be ready for use in minutes.

ACCURATE and PRECISE

Perfectly balanced for lifetime accuracy. Wide steel bases, at both ends, support scale, therefore require no concrete footings.

Easy-to-read weighbeam is chrome-plated. Other vital parts are electro-plated against corrosion.

THE THURMAN PORTABLE TRUCK SCALE

Est. 1918

THURMAN MACHINE CO. *SCALE DIVISION* 156 North Fifth Street Columbus, Ohio Dept. B

ADVERTISERS IN THIS ISSUE

Adams Mfg. Co., J. D. 11
Aetna Casualty & Surety Co., The 120
Air Placement Equipment Co. 116
Allis-Chalmers Mfg. Co. 90, 91
Amer. Foreign Ins. Assn. 69
American Steel Dredge Co., Inc. 141
Atlantic Steel Corp. 138

Barber-Greene Co. 83
Barco Mfg. Co. 123
Baxter Co., J. H. 179
Bay City Shovels, Inc. 31
Berger & Sons, Inc., C. L. 77
Bethlehem Steel Co. 143
Bruning Co., Inc., Charles 88
Buchanan Lumber Co. 138
Bucyrus-Erie Co. 177
Buff & Buff Mfg. Co. 116
Byers Co., A. M. ..... 2nd Cover

Cast Iron Pipe Research Assoc., Inc. 6, 7
Caterpillar Tractor Co. 58, 59
Ceco Steel Products 132
Celotex Corp., The 139
Cement Gun Co. 124
Cities Service Companies 98
Cleaver Brooks Co. 134
Cleveland Trencher Co. 94
Concrete Reinforcing Steel Institute 99
Concrete Surfacing Machinery Co. 176
Continental Motors Corp. 10
Cook Bros. Equipment Co. 102
Coxhead Corp., Ralph C. 53

Delta Power Tool Co., Rockwell Mfg. Co. 115
Deslauriers Column Mould Co., Inc. 126
Detroit Diesel Engine Div., General Motors Corp. 131
Dodge Corp., F. W. 142
Dorr Co., The 92
Dresser Mfg. Div., Dresser Industries 105
Dudgeon, Inc., Richard 142

Economy Forms Corp. 176
Electric Tamper & Equip. Co. 97

Fate-Root-Heath Co., The 112
Fennel Instrument Corp. of Amer. 113
Fenwal, Inc. 32
Fenestra Building Products 52
Ford Motor Co. 4
Fort Pitt Bridge Works 95
Foundation Equipment Corp. 2
Franki Foundation Co. 86
Fruehauf Trailer Co. 127
Fuller Mfg. Co. 122

Gar Wood Industries, Inc. Findlay Div. 172, 173
General Motors Truck Div., General Motors Corp. 87
Goodyear Tire & Rubber Co. 1
Grace Mfg. Co., W. E. 133
Gradall Div. of the Warner & Swasey Co. 170
Griffin Wellpoint Corp. 68
Gunite Concrete & Const. Co. 120
Gunite Construction Corp. 116

Hardinge Co. 76
Harnischfeger Corp., Welding Div. 66
Hartford Fire Insurance Co. 12
Hartford Accident & Indemnity Co. 12
Heede, Inc., B. M. 57
Heil Co., The 118
Hyster Co., The 117

Ingalls Iron Works 43
Inland Steel Prods. Co. 79
Insley Mfg. Corp. 72
International Harvester Co. 54, 55
Intrusion-Prepakt, Inc. 73
Irving Subway Grating Co. 179

Jaeger Machine Co. 110, 111
Joy Mfg. Co. 100

Koehring Co., The 84, 85

LeRoi Co. 128
LeTourneau, Inc., R. G. 146, 147, 148
Lewis & McDowell 68
Lock Joint Pipe Co. 96
Lufkin Rule Co. 126

MacWhyte Co. 125
Marlow Pumps 144, 145
Marsh Co. 174
Master Builders Co. ..... 3rd Cover
Maxon Construction Co., Dumcrete Div. 135
McGraw-Hill Book Co. 71
Minneapolis-Moline 51
Moretrench Corp. 18
Morse-Starrett Products Co. 171
Motorola, Inc. 78

National Tube Div., U. S. Steel Corp. 140
Naylor Pipe Co. 81
Nelson Stud Welding Div., Gregory Industries, Inc. 119
Northwest Engineering Co. 3

Omega Machine Co. 48
Osborn Engrg. Co. 171
Ozalid Products Div., General Aniline & Film Corp. 67

Patent Scaffolding Co. 178
Pennsylvania Drilling Co. 141
Perlite Div., Great Lakes Carbon Corp. 133
Philadelphia Gear Works 56
Pittsburgh-Des Moines Steel Co. 5
Portland Cement Assn. 150
Pusey-Jones Corp. 130

Raymond Concrete Pipe Co. 89
Remington Arms Co., Inc. 101
Roebling's Sons Corp., John A. 93
Rollway Bearings Co. 80
Russell, Burdsall & Ward Bolt & Nut Co. 74
Rust-Oleum Corp. 15

Safeway Steel Products, Inc. 62
Sauerman Bros., Inc. 142
Schield Bantam Co. 106
Schult Corp. 114
Servicised Products Co. 126
Sherman Products, Inc. 114
Sisalkraft Co. 141
Smith-Blair, Inc. 100
Smith Co., S. Morgan 63
Sprague & Henwood, Inc. 171
Standard Oil Co. of Calif. 175
Standard Steel Spring Co. 82
Symons Clamp & Mfg. Co. 13

Texas Co. ..... 4th Cover
Thew Shovel Co., The 121
Thurman Machine Co. 178
Timber Engineering Co. 9
Timken Roller Bearing Co. 14
Tinney Drilling Co. 114
Trailer Village, Inc. 138
Tri-Line Co. 82
Truscon Steel Co. 35
Tube Turns, Inc. ..... Insert 49, 50

Union Mercantile Co. 168
U. S. Pipe & Foundry Co. 169
U. S. Rubber Co. 109
United Steel Fabricators, Inc. 120
Universal Atlas Cement Div., U. S. Steel Corp. 20
Universal Concrete Pipe Co. 60
Universal Manufacturing Co. 65
Universal Sewer Pipe Corp. 70

Vibroflotation Foundation Co. 168
Vickers, Inc. 16
Vulcan Iron Works 75

Western Foundation Corp. 174
Wheeling Corrugating Co. 61
White Motor Co., The 64
Williams Co., J. H. 126
Wincharger Corp. 75
Wisconsin Motors Corp. 124
Wolverine Tube Div. of Calumet & Hecla, Inc. 44
Wood Co., R. D. 119
Worthington Corp. 8

Youngstown Sheet & Tube Co. 40

Professional Services 167

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

Employment 158, 159
Educational 159
Business Opportunities 159
Notices 154-157
Equipment (For Rent, Sale, Wanted) 159-167

ENGINEERING NEWS-RECORD

D. S. Robertson, *Adv. Sales Manager*
Howard T. Olsen, *Business Manager*

Sales Representatives: M. J. Storz and E. A. Callahan, Jr., 330 W. 42nd St., *New York;* F. G. Hudson, L. H. Hunt, W. G. Payne, 520 N. Michigan Ave., *Chicago* R. E. Dorland, 68 Post St. *San Francisco;* A. B. Cozzens, 17th & Sansom Streets, *Philadelphia;* F. E. Duff, Jr., Hanna Bldg., *Cleveland;* B. F. Horn, Penobscot Bldg., *Detroit;* W. E. Donnell, Continental Bldg., *St. Louis;* H. L. Keeler, 1111 Wilshire Blvd., *Los Angeles;* R. H. Sidur, Rhodes-Haverty Bldg., *Atlanta;* James Cash, First National Bank Bldg., *Dallas. Other Sales Offices:* 738-39 Oliver Bldg., *Pittsburgh;* 350 Park Sq. Bldg., *Boston;* McGraw-Hill House, *London.*

For over 50 YEARS Engineers Have Utilized the experience & counsel of IRVING SUBWAY GRATING CO.

Over 50 years ago Walter Irving founded what is now the Irving Subway Grating Co. Shortly thereafter he conceived the idea of Open Steel Flooring and a new industry was born. Since that time experience has taught us a lot about grating, its use and its properties. We will be happy to share this experience and know-how.

For Further Information Write For Booklet

IRVING SUBWAY GRATING CO., INC.

ESTABLISHED 1902

OFFICES and PLANTS at
5063 27th St., Long Island City 1, N. Y.
1863 10th St., Oakland 20, California

Douglas Fir TIMBERS

Creosoted, or pressure treated with the non-leaching salt preservative, Chemonite. Our long experience in pressure treating Douglas fir is your assurance of satisfaction.

PREFABRICATION AVAILABLE

We prepare fabrication drawings, placing plans, and can help you with technical advice. Call us.

Let BAXCO fill your needs promptly!

J. H. Baxter & Co.

200 Bush Street, San Francisco 4, Calif.
3450 Wilshire Blvd., Los Angeles 5, Calif.

J. H. Baxter & Co. of Oregon, Eugene, Oregon
Baxco Corporation, Portland, Oregon

EDITORIALS

Seaway's prospects brighter

Prospects for the St. Lawrence seaway and power project have brightened considerably in recent weeks, but don't expect dirt to start flying soon. Several obstacles —any one of which can be time-consuming—stand in the way of the undertaking even though it now has approval of the National Security Council and the President's Cabinet.

Chief sources of delay are: Lack of an international agreement covering the project; no decision as to where the new ship canal is to be located in the international section of the river—whether it is to be on the New York or Ontario side; no decision as to how costs are to be apportioned between the two countries; no decision on whether tolls are to be charged, and no decision as to what agency is to build the navigation facilities, if located on the New York side.

Agreement as to where those navigation facilities are to be located and as to how the cost of them is to be shared could be reached fairly quickly or could be long delayed, depending on the strength of the opposition in Congress and the willingness of the Canadian Parliament to abandon its current engineering studies for building the new canal entirely within Canada.

When engineering studies for the ill-fated 1941 St. Lawrence agreement were being made, the designers were under no restrictions as to where the canal and locks in the International Rapids section of the river were to be situated. They picked a location on the New York side as being the best. A few weeks ago, when Canadian Prime Minister St. Laurent was in Washington discussing the St. Lawrence project with President Eisenhower, the Prime Minister expressed some doubt as to the accuracy of that conclusion. Since Canada is determined to go ahead with the seaway regardless of what our Congress finally decides to do, the Canadian government may stand out for completion of its engineering studies for the waterway so that it cannot again be blocked by lack of favorable action by Congress.

On the other hand, since it seems probable that an agreement as to allocation of costs of the navigation facilities in the international section of the river would place most of the cost on the U. S. government—in view of Canada's large expenditures within her own borders—the Canadian government may agree to a location on the New York side. That location has these obvious advantages: Detailed plans for it have been prepared by the U. S. Corps of Engineers, whereas Canada's engineering studies still are far from complete. If most of the cost is to be charged to the U. S., Congress, presumably, would be more receptive to paying for navigation facilities on the New York side of the border than in Ontario.

Finally, as to what agency in the U. S. will participate in building these navigation facilities, the most favored legislation now in Congress calls for setting up a government corporation to build them. It would have a capital of $100 million, backed by tolls from the ship canal. The Eisenhower Administration is reported to be in favor of that setup, but the proposal appears bound to be challenged as unsound by opponents of the project, because of uncertainty as to how much traffic will use the seaway. And a new agency would be slow in getting actual construction started.

To anyone who has observed how opponents of the St. Lawrence project operate in Congress, it seems obvious that these many unsettled issues might delay its start indefinitely.

Housing is the key

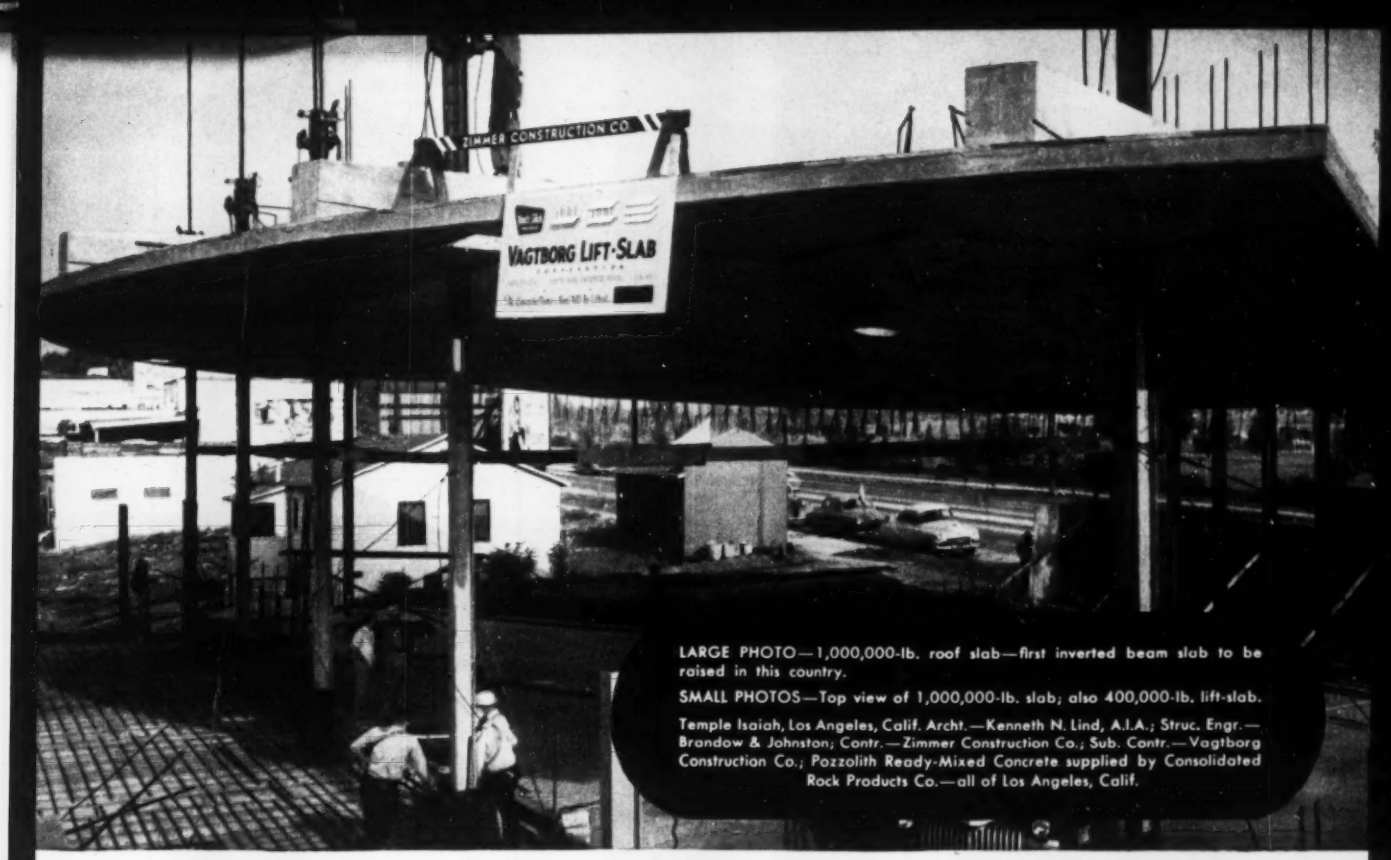
Housing can be the heart of area-wide development demanding many types of construction, as evidenced in the story of what is taking place in the area around New York's Throggs Neck Houses (p. 36 of this issue). Homes on the vacant lands fringing our cities breed construction of whole new neighborhoods.

A less obvious relationship these new homes bear to other construction is their definite tie-in with slum clearance near commercial centers. The simple fact is that no slum can be demolished until housing for relocation of residents is available.

Writers of the Housing Act of 1949 had this fact in mind when they set forth Title I of the law, authorizing federal loans and grants to assist cities in clearing slum areas to make them available for redevelopment by private capital. They followed through with Title III, authorizing new units of low-rent public housing for relocation of present slum dwellers. An estimate that one-fifth of the 10 to 15 million Americans who live in cities dwell in slums or substandard areas points up the magnitude of the relocation job ahead if our cities are to be rid of blighted residential areas.

In 1950, federal contributions and loans to local slum-clearance programs were expected to stir up 810,000 public housing starts in a six-year period to help fill the need. In 1951, there were 71,200 starts; 1952 saw the starts diminish to 60,000. And now, Congress is debating the possible cutting of all 35,000 public housing units budgeted for 1953.

Possibly in some instances private initiative can provide the low-rent housing needed to accommodate people to be displaced by big slum-clearance operations within our cities. But in most instances public assistance will be needed if that type of housing is going to be built at a rate fast enough to give any significance to slum clearance within our big cities. That fact needs to be impressed upon those who favor cutting the federal program back to nothing.



LARGE PHOTO—1,000,000-lb. roof slab—first inverted beam slab to be raised in this country.

SMALL PHOTOS—Top view of 1,000,000-lb. slab; also 400,000-lb. lift-slab.

Temple Isaiah, Los Angeles, Calif. Archt.—Kenneth N. Lind, A.I.A.; Struc. Engr.—Brandow & Johnston; Contr.—Zimmer Construction Co.; Sub. Contr.—Vagtborg Construction Co.; Pozzolith Ready-Mixed Concrete supplied by Consolidated Rock Products Co.—all of Los Angeles, Calif.

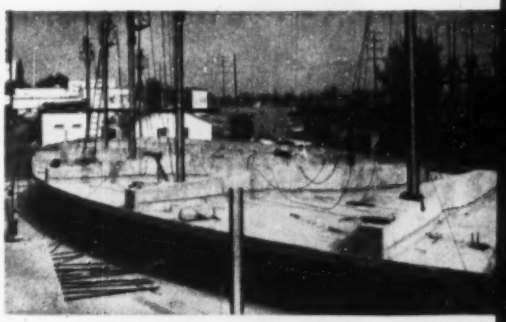
First Inverted Beam Lift-Slabs Are POZZOLITH CONCRETE

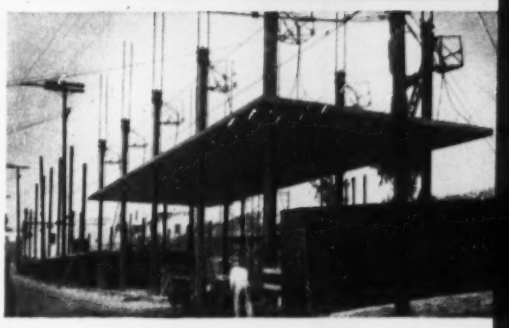
IN a letter about this job, Zimmer Construction Co., the contractor, said—"With the use of Pozzolith in our concrete we were able to . . . pour both slab and beams together with 3½" slump, yet were able to maintain the necessary workability so necessary in this type of pour without excessive vibrating.

"Further, with the use of Pozzolith we obtained a seven day test of 3,200 pounds and a twenty-eight day test of 4,600 pounds, allowing us to raise these slabs in seven days instead of the usual fourteen day delay."

Better, more economical concrete is obtained with Pozzolith because it *reduces the unit water content* of a mix approximately 15%. As stated by the American Concrete Institute (ACI 613-44, Page 655)—"For a given set of materials and water-cement ratio, the unit water content (water required per cubic yard of concrete) is the most important basic factor affecting the quality of concrete." Obviously, for a given water-cement ratio, the mix requiring the lowest water content will also produce the most economical concrete.

Investigate the advantages of Pozzolith for your next job . . . it will enable you to obtain the required qualities *at lower cost than by any other means*. "See-for-yourself" Pozzolith demonstration kit supplied on request . . . without cost or obligation.





the MASTER BUILDERS Co.

Subsidiary of American-Marietta Company

Modernizing an approach to Wisconsin's State Capitol

Laying a new Texaco Sheet Asphalt wearing surface over the old pavement on West Washington Avenue, one of the principal traffic arteries of Madison, Wisc. and main approach to the Capitol. Payne and Dolan were the contractors.

The paving machine in the above photograph is placing a plant-mixed asphalt surface of the Sheet Asphalt type over an old asphalt pavement on a main thoroughfare of Madison, Wisc. Laid to a thickness of 2½ inches, this dense, resilient wearing surface forms a close, lasting bond with the existing asphalt pavement. By this method, at a moderate cost per square yard, Madison has obtained a new pavement capable of withstanding heavy, modern traffic for years to come at a low upkeep cost.

American cities began paving with Texaco Asphalt exactly half a century ago. The number of representative cities whose traffic has been served by Sheet Asphalt, Asphaltic Concrete, Asphalt Macadam or one of the other types of Texaco Asphalt construction, totals well over 1500. Many of these cities have paved more than 500,000 square yards of their streets over the years with one or more of these types of construction.

Your city's streets may call for a heavy-duty pavement, a low-cost surface for light traffic, or an improvement somewhere between these two in durability and cost. To help municipal officials choose the type of construction best suited to their requirements, we have prepared a pair of booklets which contain helpful information on the various types of Texaco Asphalt surfacing recommended for city streets. You can obtain copies of these publications without obligation by writing our nearest office.

The TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO

REG T M

TEXACO ASPHALT